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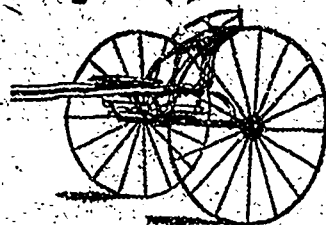
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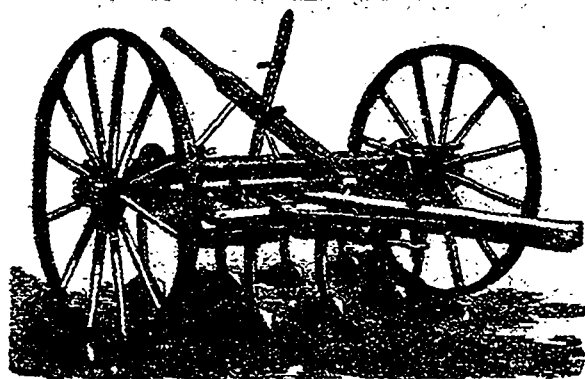
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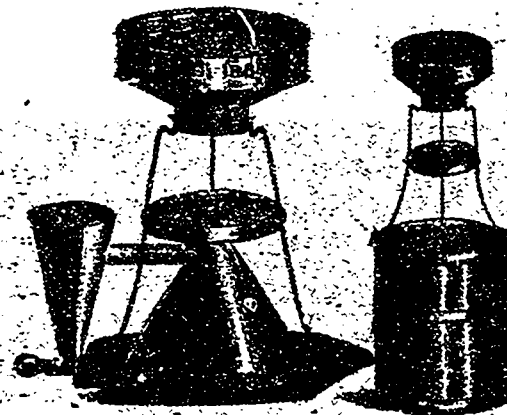
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THE CANADIAN LIVE-STOCK AND FARM JOURNAL

DEVOTED TO THE INTERESTS OF THE STOCK-RAISERS AND FARMERS OF CANADA.

VOL. VI.

HAMILTON, CANADA, APRIL, 1889.

No. 66



GROUP OF CLYDESDALES.

Owned by and the property of Mr. James Hunter, "Sunnyside," Alma, Ont.

The Clydes of Sunnyside.

The above group of very beautiful Clydes are owned by Mr. James Hunter, Sunnyside, Alma, Ont., a stockman whose singularly good judgment and persistent effort has done so much to promote the true interests of the farming community in the Dominion, particularly in regard to the breeding of Booth and Cruikshank cattle of the most magnificent types, as has been well attested over and over again in many of our chiefest show-rings.

It has always been a leading feature of the Sunnyside herd, that most if not all the many prize winners in it, and sent from it, have been of Sunnyside breeding, and now a stock of Clyde horses is being bred there, every one of which is a credit to the judgment and skill of the owner. They show, in a marked degree, uniformity and sameness of type, which have always been a feature in the breeding at Sunnyside, and which are always indicative of skill and rare judgment.

The stallion, Gambetta, imp., [43], improves with time. That rare blockiness of build and strength of coupling, which characterized him as a colt, he retains to the present, nor does this conformation in any degree interfere with his spirit and action, both of which are all that could reasonably be desired. He was

bred by Mr. Chas. Wier, Ponfegh, Douglas, Lanarkshire, Scotland. He was foaled in 1880, and is a get of Brilliant (1598), the winner of the £100 Lesmahagow premium in 1879, also the £100 Dumfries premium, 1880. He also gained second prize at Glasgow show in May, 1879, and the Highland Societies' prize at Perth the same year. Gambetta's dam, Maggie (671), won second prize as a yearling at Carmichael Agricultural Show; second as a two-year-old; first as a three-year-old; second as a four-year-old; and first as a brood mare in 1880. Gambetta won first prize for best foal, a very large class competing.

But it is as a stock horse that he particularly excels; his power of transmitting his own excellent peculiarities being something wonderful, in so much that his reputation in this respect is far from local, although he has never been allowed to stand for service far from his own home.

The mare, Queen, imp., [8], foaled 1880, is a worthy associate of the grand stock horse we have just described, to which she bears a close resemblance in all points of conformation that characterize draught horses, possessing great powers of physical capacity and endurance. She was bred by Chas. Constable, Ballegermie, Scotland; is by the sire, Dainty Davy,

alias Wallace (214), and out of the dam, Sall, by Baronet (33), and was bred by Sir Wm. Sterling Maxwell, of Kier, Dumblane. Her excellent breeding qualities have already made her equal to an ordinary farm in point of revenue, and she is yet but in her prime.

The handsome filly shown in the picture is the youngest production of Queen, and by Gambetta, and like all the others, is a gem. The young road horses being bred by Mr. Hunter, some of which are still at Sunnyside, and in the market, have a close resemblance to their worthy sire.

The Shorthorn herd numbers 60 head, being led by the beautiful stock bull, Sir Ingram, a son of Ingram's Chief, and out of a Mantilini British Ensign, by British Flag. The calves coming to hand are very promising.

"I have taken your JOURNAL for a few years back, and I like it to-day better than ever, would not like to do without it. That column about Horse-breeding, by F. C. Grenside, V. S., Gu. Iph. in your February issue would be worth the dollar to any farmer. Hoping I will see some of the thoroughbred horses soon in Glengarry, where I may say we have none. Enclosed is \$1. the renewal for JOURNAL for another year."—John McMaster, Laggan, Ont.

"I congratulate you on the continued and, indeed, increasing excellence of STOCK JOURNAL. It is breeding, head and neck, anything of its class in Canada. Success to the enterprise."—L. Gault, Red Deer, N. W. T.

Canadian Live-Stock & Farm Journal

PUBLISHED MONTHLY BY

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To Advertisers.—Advertisements of an appropriate nature will be inserted in the JOURNAL at the following rates: For a single insertion, 18c. per line, nonpareil (12 lines makes one inch); for three months, 15 cents per line each insertion; for six months, 13c. per line each insertion; for one year, 10c. per line each insertion. Cards in Breeders' Directory, not exceeding five lines \$1.50 per line per annum. Copy of advertisements should reach us not later than the 25th of each month (earlier, if possible). If later, it may be in time for insertion, but often too late for proper classification. Transient advertisements payable in advance. No advertisement inserted for less than 75c. Contracts broken by insolvency or otherwise will revert to the usual rate of 18 cents per line per insertion.

To Correspondents.—All communications intended for publication in the JOURNAL should reach us by the 20th of each month—sooner if possible. We do not hold ourselves responsible for the opinions of correspondents.

Remittances may be made in registered letter at our risk. The receipt of the JOURNAL will be sufficient evidence to subscribers that their remittances have been received.

All communications to be addressed STOCK JOURNAL CO., 48 John street south, Hamilton, Ont.

HAMILTON, CANADA, APRIL, 1889.

READERS of the JOURNAL yet in arrears will please renew their subscriptions at once, and get our handsome picture of the Ontario Agricultural College, Guelph, Ont.

WHILE we believe that the facts brought to light through the participants in the battle of the breeds has done much to lessen the patronizers of the scrubs throughout the land, yet we think that if the upholders of the merits of the different breeds would work more in unison and centre their forces on the improving of our native stock, showing the superiority of their favorites over the scrub, much more good would be accomplished. Let the battle rage on until one or more shall be acknowledged superior by fair right of merit. We gladly welcome to our columns facts and experiences that relate to any of our recognized breeds, that the scrub may be driven from the land, for we feel assured that as soon as a correct idea of the merits of the pure breeds exists among our farmers, they will not be loth to take advantage of their excellencies.

MALES which have proved themselves as of the right sort by their stock should not be lightly discarded or hastily thrown aside. An aged bull in the sale ring will bring a very moderate price indeed, compared with a young and promising one in appearance, and yet the young one, being unproved, may never equal the former as a sire. Aged males of proved usefulness cannot be kept too long while they remain useful as sires, and young ones cannot be turned off too soon when it has been discovered that their get is not just what is desired. The all-round improvement of breeds is very slow, and it is so because of the mistakes made by breeders in selecting males. More injury has arisen to the cause of breeding pedigreed stock by retaining all the males, good, bad and intermediate, for breeding purposes, than from any other cause, and until breeders make up their minds to use the knife where it should be used, the improvement in the pure stock of the country will be comparatively slow. All the males which have

proved themselves as of the right type should not go into the butcher's hands until the time is approaching when they cease to be useful.

It is a wide question, the amount spent annually in the purchase of artificial fertilizers. Every country on the continent has its establishment for manufacturing these, and they are produced annually to the value of many millions of dollars. When judiciously applied they will give a good return, but as we have said frequently before, that the farmer who buys them and who, at the same time, allows the manurial resources which he has at hand to waste, is not doing his whole duty. The amount spent in the purchase of manures will give one an idea of the value of the manure that is made on the farm, and this is to be credited to stock-keeping. If the whole of the manure thus used had to be purchased, farming could not be successfully carried on. We have doubts as to whether in summing up the comparative profits of stock-keeping, sufficient importance is usually attached to the manure, which is as much one resultant product as the beef or milk. If stock-keeping tends to the maintenance of the increase of the fertility of the farm, there cannot easily be too much attention given to it. As the manure made by a pure-bred or an improved beast is at least as good as that made from a scrub, with far better returns for the food used, it is a strange infatuation that leads people to adhere to the breeding of scrubs.

TIMES have been stiff of late and farmers have not made much money. Because of this a considerable number are becoming fretful and feel inclined to sell and embark in some other calling. Against such a course we enter our most solemn protest. In ninety-nine cases out of a hundred it will end in failure. One used to farming till the meridian of life has been reached is not likely to make a success at anything else. The farm provides a living, and in many instances a little more, especially if unencumbered; therefore, stick to the farm. A living is in itself a considerable income and should not be despised till times take a turn for the better. Although farming is not giving very encouraging returns at present, these may improve. With a wider market for the farmer in future they will be certain to improve, and surely every farmer in the Dominion will lend his best energies to bring about a result that would prove so much to his advantage. In the meantime let him try and make the best of the disabilities under which he is laboring. Let him improve his stock and feed it according to the most approved methods; be on the alert as to a knowledge of what those methods are, and use all diligence to improve the producing power of his farm. A certainty, though it is one that may have its hardships and drawbacks, is worth ten times an uncertainty, though the latter be ever so attractive to the vision.

MR. BATES insisted that cattle must be bred for utility, and every man of ordinary sense will agree with him. The same will hold true of all domestic animals. This involves what should be the aim of every stockman worthy of the name, the attainment of best results. This cannot be when prejudice is allowed to overmaster reason and observation. The great Mr. Bates himself was not entirely innocent here, for as one has well remarked of him that "in the unreasoning tenacity with which he adhered to his favorite strains of blood, even when better animals could be had of other strains and of blood equally pure and ancient, his practice was not in accord with his precept." If this great improver of the Shorthorn

tribes thus erred, it is not surprising that some of his admirers have in this, too, followed in his footsteps. A stubborn refusal to introduce fresh blood at sundry times when it was needed might have tended even more to immortalize the famous strains of which Mr. Bates was the founder. Line-breeding has its uses, and very valuable they are, as the intensification and repetition of valuable characteristics; but it has its limits, and here it is that the apostles of line-breeding have most failed. They have refused to recognize those limits. When the reproduction of desirable characteristics waned, they shut their eyes, and deterioration in numerous instances has been the penalty.

The Journal.

In the valedictory of the late editor of the JOURNAL it was stated, "It (the JOURNAL) is to be conducted 'with increased energy, increased power, and we believe increased success. Its principles, its aims, its endeavors, remain the same, and its future will move in precisely the same lines, only with increased momentum. The needle guiding it still 'points to the star of supreme excellence.'"

Though but a brief half year since these words appeared, our readers will agree with us that the above prescribed 'lines have been literally followed close drawn, and hard of attainment though they undoubtedly are.'

So far as known to us the progressive farmers and stock breeders appreciate the JOURNAL more than ever before as evidenced by its increased circulation over past years. This, the most practical test of superiority, is strongly borne out by a comparison with other periodicals endeavoring to cultivate the same field in Canada or elsewhere. With the pleasure of appreciation we have been buoyed up, and we now feel assured that the old banner of progress is still as high uplifted as of yore. A comparison is voucher for the fact that we lead, while others, slighting the warning cry of Carlyle, "there has become intense, the runners are treading upon each other's heels; woe be to him who stops to tie his shoe strings!" have neglected to keep up with the century in which we live, and have dropped behind. We have not only struck the iron while it was hot, but what is more commendable in our eyes, we have struck it until it has become hot, thus making the stock-raising interest, truly, the right arm of the first and noblest of the sciences.

Our readers will find the present issue especially interesting. Mr. Rich. Gibson, who possesses an inexhaustible fountain of Shorthorn lore, and the first authority of Canada, has consented to give us a series on Bates Shorthorns, the first contribution appearing in this issue. Mr. E. G. Preece, of Shrewsbury, Eng., who also begins with this month, is well known to all importers of Shropshires, besides having very extensive knowledge of the flocks and herds of Britain, all his connections being noted for their work in this direction. Agricola, with his usual free flowing pen, takes up the subject of swine, and Mr. D. McCrae still continues to favor us monthly with his customary spicy and instructive articles.

Our illustrated articles we feel sure will meet with appreciation. Those illustrating the articles on the points of a draught horse, and those of wheat rust have been specially prepared for us under our direct supervision.

The reports of the association meetings are worthy of close perusal, as well as the many other articles by our old, tried and never-found-wanting contributors.

This, then, our programme for this month, we feel that we are still leading the vanguard of agricultural progress in this country, no matter how loudly others may yea-heave at the hind wheels.

Dominion Shorthorn Breeders' Association.

A large gathering of prominent and influential breeders of Shorthorns met at Shrewsbury Hall, Toronto, on February 27th, to discuss matters vital to their large and growing interests in the stock-raising industry of our Dominion. The chair was well represented in the person of John Dryden, M. P. P., Brooklin, the president, who was ably supported on his right by the secretary, Mr. Henry Wade, Toronto.

In view of Mr. J. R. Martin's notice of motion to change the standard of registration, some of the members anticipated a lively meeting, but if the latter is to be construed as meaning that the members were likely to be at loggerheads over it, we are pleased to note that they were terribly disappointed; but in the sense of being conducted in a vigorous, business-like manner they were, we are sure, doubly satisfied.

The morning session was mainly taken up with the election of officers, the following being chosen:

President, John Dryden, M. P. P., Brooklin; vice-presidents, Richard Gibson, Delaware; Hon. D. Ferguson, M. P. P., Charlottetown, P. E. I.; J. H. Ladner, Ladner's Landing; J. S. Williams, Knowlton, Quebec; J. E. Fairweather, New Brunswick; James Geddes, Calgary, N. W. T.; Prof. Geo. Lawson, Halifax, N. S.; L. L. Smellie, Binscarth, Man. Secretary and editor, Henry Wade, Toronto.

The appointment of delegates opened the afternoon session. Mr. Jno. Dryden, M. P. P., and Mr. Jas. Russell, Richmond Hill, were appointed delegates to the Industrial Fair Association, and James Morgan, Kerwood, and Arthur Johnson, Greenwood, were appointed delegates to the P. C. Farmers' Institute.

Mr. Richard Gibson, of Delaware then read the following paper on

THE FUTURE OF SHORTHORNS.

To the President and members of the Dominion Shorthorn Breeders' Association.

GENTLEMEN,—At your President's suggestion I offer you a paper on "The Future of Shorthorns." Believing as I do that it is the duty of every member of this association to do what he can to make the annual meeting more interesting, to that end I have consented to prepare a paper on the above subject, and so add my mite, premising however, that I do not wish to pose as a prophet, or that I am able to see further into the future than my brother breeders. I do not pretend as much, but this I do know, that a great many breeders are feeling discouraged, and also that there is but little money to be made out of them now, or prospectively. It is to such I wish to address myself, and I trust I can give them some little encouragement.

In the first place, let us cast back for 4 or 5 years, and notice the change in prices that has taken place in that time amongst the various other breeds of cattle. Herefords were booming; as much as \$500, \$600, or \$700 were being paid for bulls for ranche purposes. That trade is gone. As milkers they are not a success, hence of but little value in the thickly populated States, where milk, butter, cheese and cream are required, as well as beef, and are only of value on the rich black soils within the corn belt of the Prairie States, and their worth has depreciated so much that they are now of less value than the Shorthorn, the breed they maligned so much, and that notwithstanding the amount of money in advertising and helping the boom, in every way that money, tact and organization could accomplish. To stop importations they even went so far as to impose a fee of \$100 on each imported animal offered for entry in their head-book. While the Shorthorn breeder fought against every breed unassisted, he had also to fight those who should have been his friends, viz., other Shorthorn breeders; that is, breeders of other strains of blood besides his own, and they were often his worst foes. Whereas the Hereford breeders were thoroughly organized and disciplined and pooled their cattle and fought as one man, hence the secret of so many triumphs in the show-rings.

What of the Angus? Notwithstanding their successes at the fat cattle shows their star is set, except in the corn belt of the Prairie States. Have they not been worked for all they are worth? I venture to predict that within a very few months there will scarcely be a respectable herd left in Ontario; they are not wanted here, and the boom in the States is broken—no marching through city streets with herdsman dressed in kilts, leading the "Bonnie Doddies," with pipers at the head of a procession. No importations are being made, and last year the first for some time, at the annual spring sales in Scotland, the Shorthorns were not only in most demand, but actually realized the higher figures. I will not detain you continuing the parallel with Holsteins, Jerseys, etc. You all know they have depreciated in value more than the Shorthorn.

But I would not have you assume that I predict a brighter future for the Shorthorn because of the depreciation in value of the other breeds; but only in as much as so many young breeders were coaxed away from the golden calf to seek after false gods in the shape of antagonistic breeds; and as these breeds have been tried and found wanting, in the future we may expect an exodus of young breeders who have hitherto of late years been persuaded to invest in anything but Shorthorns. But there are signs that would indicate we are now nearing the morn of a bright and prosperous day, and I think the golden rays can now be seen—instanced by the sale in Chicago last November, when 79 head sold for \$43,320,—average over \$548—and 12 head of one family sold for \$29,050, an average of \$2,420.

Again, there is the fact that Shorthorns are thoroughly useful. They are not a fancy article, like a piece of old china, but intensely practical, and of every day utility. That they the more nearly approach the general purpose cow than any other pure breed is unquestionable, and if any doubters could only see the good cows now used in the large dairies in the vicinity of London they would no longer be in doubt as to their value as milkers; and my firm belief is that even if the Hereford or Angus could take their place as beef manufacturers, their influence in the dairy economy could not be filled elsewhere, and they would be wanted for that purpose.

It may be objected I am saying too much on this subject, but I feel it is one of the most important questions in connection with the breed to-day. You can have good milkers and good feeders. I have had them and so can others.

Though prices are not as high nor the demand as great as we might wish for, Shorthorns can yet be bred profitably, and I wish you not to forget that in the natural course of events there must be times of depression. There never has been a business or industry of any magnitude that has been continued for a length of time but what has met with reverses, and why should you expect the breeding of stock to be an exception? There have been periods in the history of the breed on this continent when the situation was gloomy indeed. Mr. Allan, in his history of the Shorthorn, writes, "With the year, 1840, under the continued depression of the financial interests of the country at large, the spirit so active during several periods in cultivating the Shorthorns, waned, and further importations ceased. . . . There was little or no encouragement for breeding Shorthorns. Under this depressed condition of affairs hundreds of well-bred bull calves were castrated for steers, and many cow-calves spayed and reared for the shambles. Prices for the best blooded animals were merely nominal; public sales were scarcely made at all as in the past years, and private sales infrequent; nor was the depression for a few years only, but continuous or nearly to quite the year 1850. In Kentucky, New York and New England, Shorthorn values were no better, and many breeders who had begun rearing them but a few years before, became disgusted with their stock, turned their choice bred cows into the dairies, put them to common bulls and sold off their calves remorselessly to the butcher. During this depressing period numerous good pedigrees were lost as not being worth preserving, and many valuable families of this lordly race became almost if not wholly extinct."

What a picture! And yet in the year mentioned, viz., 1850, we find a small bevy of American gentlemen crossing the Atlantic and attending a sale held at Kirklevington in May, where they succeeded in purchasing 3 females. And again, three years later at the Tortworth sale, the same, with other Americans, laid the foundation for a herd whence a single cow

realized very much more than the whole 68 animals brought at Kirklevington—a herd that at public auction realized \$380,490 for 108 head.

Then let us take heart of grace; let us not be discouraged. The signs are right and the good times are coming. There never has been, within my memory, a time when a breeder could so easily set himself right if on the wrong track. Never a time when a foundation for a herd could be procured at such a small cost, and never a time when money invested in well-bred animals at current prices seemed so certain of being safe and profitable. Just as sure as summer follows winter, so sure will depression be followed by buoyancy. And just as sure as Ontario is worth farming, stock must be the leading feature; and if so, the Shorthorn must take that high position to which he is entitled, both by his lineage, prepotency and intrinsic worth.

On concluding his paper Mr. Gibson was tendered a vote of thanks for his able essay, which was thoroughly appreciated by all his hearers, and a resolution was passed that the leading stock papers be asked to give it publicity.

After a short discussion it was moved by Mr. Francis Green, seconded by Mr. James Russell,

That all calves dropped after January, 1889, be registered when 18 months old, or double charges be made for their entry.

This motion was carried, members concurring in the view that besides aiding materially the financial condition of the association, it would also lessen many of the present difficulties of registration.

Mr. J. R. Martin, of Cayuga, then introduced his motion the notice of which appeared in our February number. The members were almost unanimous in desiring to have the standard remain untouched, though a few members supported Mr. Martin in his renovation. The outcome of the matter was that a motion to the effect that the rule be recast, but not so as to affect the standard in any way, was carried.

Mr. J. C. Snell, Edmonton, then followed with an excellent paper that was well received, on

THE MILKING PROPERTIES OF SHORTHORNS AND HOW TO IMPROVE THEM.

It has been justly claimed by the friends of the breed that the Shorthorns combine all the desirable qualities we need to look for in the bovine race, and we may safely say that they cover all the ground more completely than does any other breed in existence.

For the production of the largest quantity of the best quality of beef at the least cost, the records of public tests in England and America unambiguously show that the Shorthorns and their grades have grandly held their own, while as a prover of other breeds and of native cattle no other breed has shown such splendid results, as is seen in the fine grade cattle of this and other countries.

These are assertions which the few who are interested in cattle of the rival beef-breeds may dispute, but it is clear that the consensus of public opinion in this country, after a fair trial of the different breeds for the last 25 or 30 years, is overwhelmingly in favor of the Shorthorns, as is evidenced by the large and increasing number of breeders of these, as compared with the few who have adopted the other breeds, and the very limited extent to which they or their grades have spread in the country.

But we have evidently arrived at a point in the history of agriculture in the Dominion, and especially in Ontario, where the cultivation of grain for sale can no longer hold the prominent place in the plans and resources of the general farmer that they formerly held, and when the rapid growth of our towns and cities, and the consequent demand for dairy products clearly point to the wisdom of providing for the supply of these requirements, and to the necessity of breeders of Shorthorns giving more attention to the milking properties of their cattle.

I have no doubt that one reason why this subject has been assigned me as the basis of this paper has been the experience of other breeders as well as myself in the last few years in receiving so many inquiries for bulls bred from good milking families.

Fortunately for us we have no cause to be ashamed

of the past record of the breed, for among the unchallenged facts of history none stand out more clearly than that in the early days of the breed Shorthorns were undoubtedly *milkers*, but it is a matter for regret that in our day we are too often compelled, in order to keep faith with conscience, to cite the performances of the grandam, the great grand-dam, or even some more remote ancestors, to make out a presentable case in favor of the milking qualities of our present herd. Yet I claim that it is matter for congratulation and pride that if this is the rule, there are many fine exceptions, in spite of the general practice of a system of treatment which has been calculated to deteriorate rather than to build up or improve the milking tendencies in our cows. I refer to the practice of high feeding from calf-hood to maturity, with a view only to developing the beef producing properties, with little or no attention being given to the milking qualities.

I venture to say that if the same system of feeding and training were for a few years applied to any of the so-called milking breeds they would make even a worse showing in this regard than do the Shorthorns of to-day.

Not only has the treatment of our heifers prior to maturity been generally adverse to their milking qualities, but their experience after becoming mothers has been largely of the same nature. Being required to breed rapidly and to give milk only for a short term of from six to eight months, when their calves are weaned, as a rule, has not been calculated to establish a habit of persistence in the direction of milk production, and worse than this is the custom practiced by some breeders of having their heifers produce their first calf at two years old, putting their calves with a foster-mother and drying the heifer off in a few weeks in order to allow her to complete her growth, a system which is manifestly ruinous to the milking propensities of the cow, checking and stifling the natural tendencies and turning the energies of nature in an entirely foreign direction.

When we think of the extent to which such treatment as I have described has been practiced, the wonder is not that the breed is not famed for milking qualities, but that the cows are able to support their own calves. Yet they are doing this and doing it so well, as a rule, that no one can fairly say they are failures as milkers.

Now if my premises so far are correct; if the demand for milking Shorthorns and for bulls bred from milking families is increasing, and likely to increase, is it not wise to prepare to meet the demand? and if so, how can it be best accomplished?

Personally I have no hesitation in saying I have the most unbounded faith in the capability of the Shorthorn, if properly selected, bred, fed, and trained to make the most successful dairy cow in the world. Then how can it be done? I answer, just in the same way that such wonderful results have been obtained in the case of the phenomenal cows of other breeds, of which we read. Given as a basis a good Shorthorn cow, known to be a good milker, with the proper conformation for milking tendencies, a well-formed udder and prominent milking-veins, soft skin and hair, and a good constitution, breed her to a pure Shorthorn bull known to be the son of a deep milker, the grandson of a deep milker, and the great, great grandson of a deep milker. If you cannot get all this, get as near to it as you can. The produce, if a heifer, should not be allowed to suck its dam, or any other calf's dam; should be raised upon skim-milk, and an abundance of such food as will have a tendency to furnish bone and muscle, with abundant exercise and fresh air. Let her produce her first calf at thirty months' old, and with kind treatment, regular milking and liberal feeding, you will have laid the foundation, broad and deep, of a good milking family upon which you may safely and successfully build. Then by milking for a long time after the first calf, before she is allowed to have her second, you will have established a habit of persistent milking which is of immense value in a dairy cow, for it is not the cow which gives a large flow for a few weeks in the flush season that makes the astonishing yearly records we read of, but the one that with good treatment keeps at it for 365 days, if required, and does it well to the last day.

By perseverance in this line, careful selection of sires, and a faithful application of the principle of the "survival of the fittest," weeding out such as fail to reach a fair standard of merit, there is a reasonable certainty that deep milking families can soon be

established and confirmed. And I am firmly of the opinion that in a system of mixed farming such as is generally adopted in Canada, there is no class of cattle which can be made so profitable as the Shorthorns and their grades. The "general purpose" farmer is overwhelmingly in the majority, and he demands a "general purpose" cow, and for the supply of his demands he instinctively and reasonably looks to the Shorthorn and its grades; and the wise general farmer properly enough insists upon having a cow that is a generous milker, as well as one that will feed rapidly into beef after she has served his purpose as a milker, and the wise breeder knows he cannot afford to disregard the preferences of so large a constituency of customers.

The cow which will raise a good calf on her skimmed milk to be profitably fed on the farm into a high class beef animal at two years old, and at the same time produce a good quantity of butter to pay for her keep and enough over to provide groceries for the family and help to keep up the bank account, and when she fails to breed, can be rapidly fed into a beef animal that will bring a high price, is surely a profitable animal, and she is one which the average farmer can afford to have.

These are the cows the large dairymen are looking for—large cows which they can feed off to advantage at the end of their milking term. These are the cows which bring the highest prices at public sales, and these are the cows which produce the fine steers which have built up our great export trade in prime butcher's beasts which has added so immensely to our agricultural sources of wealth.

Then what is the duty and the interest of breeders of Shorthorn cattle, and of this association, in view of the present aspects and future prospects of business? It seems to be to encourage farmers and breeders to earnest efforts to improve and develop the milking properties of their cattle. And how can this be done? It can be done (1) by individual breeders making tests of the capabilities of their best milking cows and publishing them; (2) by the association offering prizes for the best authenticated records of milk and butter production of Shorthorn cows; (3) by supplementing, as the American Shorthorn Breeders' Association has so wisely and liberally done, such premiums as the leading fair associations can be induced to offer for dairy Shorthorns and for grade Shorthorns, and allow them to compete for sweepstakes with other breeds; and if such action is taken, then breeders must prepare for the fray. It will not do to trust to the chances of a "corporal's guard" going up to the battle of the breeds, but concerted action should be insured, and the friends of the Shorthorns need have no fears about the results so far as their cows are concerned in public tests, if they go about it earnestly, intelligently and unitedly.

The records, where they have come into competition with other breeds, are largely in favor of the Shorthorns. In England, the home of the breed, it is well known that for many years past, and not only in the remote but in the recent past, at the leading exhibitions where such prizes have been offered, and open to all breeds, the highest honors have almost invariably gone to a Shorthorn cow, and in Canada in the only instance we have on record where a grade Shorthorn competed with the milking breeds, at the Provincial Fair at London in 1885, under a careful test made by the professors of the Agricultural College, the Shorthorn grade won the highest honors easily, both for quantity and quality, though the only one of her class in the competition, and she by no means an extraordinary cow, while the milking breeds were largely represented by choice cows from the most famed herds in the Dominion.

These facts surely ought to encourage us to go on and to demonstrate, as I firmly believe we can, by the logic of pounds and ounces, that the Shorthorn is not only the best beef breed, but also the best for the production of milk and butter.

Thus may we go on to perpetuate and intensify and extend the well-earned reputation of the cosmopolitan Shorthorn, the acme of bovine excellence in all that is beautiful, symmetrical and useful, accommodating itself to all climes, circumstances and conditions of life, and yielding to man all the profit, pleasure and satisfaction he can reasonably expect from the handling of any class of cattle.

After according the essayist a vote of thanks for his able paper the association adjourned, to meet again at the call of the president.

A Shire Horse Association Formed.

A meeting of the Shire horse breeders and importers was held at the Albion, on Friday, 15th March last, when the following were present: John Gardhouse, Highfield; W. D. Norton, Aldershot; R. Macness, Tullamore; I. Blanchard, Appleby; G. Chapman, Springfield on the Credit; E. M. Jarvis, Oakville; J. Y. Ormsby, Springfield on the Credit; W. Wellington, of Welland; W. H. Millman, Woodstock; H. Wade, Toronto; J. Craig, Hamilton; F. Green, jr., Inverkip; James Addison, Malton; E. Morris, John Paisley, of Richview; J. Donkin, River-view, etc.

Mr. Wellington was moved into the chair, after which the secretary read a short statement of the object of the meeting. After which it was unanimously carried that an association be formed to be called The Shire Horse Association of Canada, the constitution adopted being very similar to that of the Clydesdale association.

The following officers were elected: President, F. Green, jr.; vice-president for Ontario, W. E. Wellington; vice-president for Manitoba, C. B. Cotton. Directors, James Addison, J. Y. Ormsby, E. Morris, W. H. Millman, Robert Macness, John Gardhouse, and W. D. Norton. Auditor, E. Jarvis; Secretary, H. Wade.

The standard of eligibility for entry in the first volume was as follows:

1. That Shire stallions and mares hitherto imported from Great Britain, should be admissible to record, provided that they be proved to be pure Shires to the satisfaction of the revising committee.
2. Shire stallion or mare by sire and out of dam, both recorded in the Canadian Shire stud book.
3. Shire stallion having five top crosses and Shire mare having four top crosses, in each case by sires recorded in the Canadian Shire Horse stud book.
4. Imported Shire stallion or mare recorded in the English Shire Horse stud book.
5. Imported Shire stallion or mare by sire and out of dam both recorded in the English Shire horse stud book.
6. Imported Shire stallion or mare will be admitted only upon the certificate of the secretary of the Shire Horse Society of Great Britain, or other satisfactory evidence that Rules 4 and 5 have been complied with.
7. In case of any question as to the eligibility of an animal to registry, the question shall be determined by the Revising Committee; and if the committee shall decide that such animal has been improperly registered as a Shire, or does not comply with the foregoing rules, such animal shall be excluded from record.
8. An animal accepted for registry is regarded as recorded.

A list of judges were named and the meeting was adjourned till the Tuesday evening of the week of the Provincial show at London, so as to afford an opportunity to the Shire men of the west to attend.

The Holstein Breeders in Council.

Few are the recognized breeds of cattle that have made more rapid progress in public estimation than the Holstein Friesian. Their merits must have hewn their pathway to the fore, and not the rapid though fleeting process of booming, for not until the 13th of last March did the patronizers and breeders of these growing favorites meet for united action under the auspices of the Dominion Holstein Friesian Association. With the increased interest in dairying we feel assured that they have but begun a useful career in improving the status of our dairy cattle.

WHAT THE FUTURE OF THE HOLSTEIN SHALL BE IN CANADA

was the first paper, read by Mr. F. C. Stevenson, Ancaster, Ont. In referring to the origin of the Holstein the essayist stated that they had been bred for more than 2000 years in absolute purity, and it was the excellent care and selection, in conjunction with the abundant pasturage of the Lowlands of Holland that soon placed them to the fore. The immense value of the dairy interests to Holland (which exceeds that of all other countries) has resulted from the excellence of their products through the excellence of their cattle. The Americans, by means of a better knowledge of the art of breeding, have made an improvement in the breed, especially as regards the butter producing qualities of their milk. The largest average weekly butter record by a herd of 20 cows has been made by Holsteins, and last year a herd of 100 cows and heifers averaged individually 18 lbs of butter in a week. To equal the unprecedented popularity they have attained in the United States the breeders must give the results of rigid tests to the public. There seems no reason to doubt but that the breed must become equally popular here in Canada, as the conditions are almost similar in the two countries. Select the bull of true dairy type and do not sacrifice this for the beef form, as we have beef breeds now that can scarcely be improved upon.

The president, Mr. E. D. Smith, of Churchville, emphasized the value of testing to show the public what the breed can do. He also thought more should be done in selecting with a view to enhancing the butter qualities.

Mr. Druit, Major Foster's foreman, Davenport, Ont., corroborated the remarks of the president and urged the breeders to not only make the tests, but to give them all publicity possible through the stock papers.

Mr. A. C. Hallman, of New Dundee, stated that he had a heifer, 3 years old, that came calved on 17th of February and she tested in March 66 lbs 6 ozs per day, and made 13 lbs 12 ozs of butter per week.

It was then moved by Mr. Druit, seconded by Mr. Stevenson, that the Association recommend each breeder to make a butter test and make it known through the press. It was carried unanimously.

THE HOLSTEIN THE FARMER'S MOST USEFUL DAIRY COW

was treated of ably by A. C. Hallman. The essayist showed that our conditions were equally as favorable as those of the industrious and frugal Hollander. The Holsteins are improved milking machines, by means of which the dairyman could, as should be his aim, have the greatest amount of feed turned into milk and butter with as little waste as possible. The Shorthorns are a noble special purpose breed and had they once been reared and bred with the same care and selection for dairy qualities as for beef, they would probably be the noblest race in the world, but the heavy demand for beef and the keen competition in the show ring has almost obliterated their dairy qualities. In nearly every contest for milk and butter, quality and quantity, the Holsteins have come off with flying colors. At the Chicago Fat Stock Show, the New York Dairy Show, the Buffalo, the Minnesota, the Ohio and the New York State Fairs the Holsteins have met all their rivals and have wrested from them every position.

In opening the discussion the president stated that the Holsteins not only gave a plentiful supply of rich milk, but they also can be made into steers and the old cows can be turned off with profit, as their

development is mainly in the hind quarters, where it is wanted.

Mr. H. Bollert instanced a case when he had occasion to turn off a pure-bred heifer that failed to breed. She was very thin when he started to feed her, as he had hoped to make her breed in that way. He fed her for two months before the shows and she turned the scales then at 1630 lbs, being at this time 3 years old past in April. He sold her in December for Christmas beef, she then weighing 1880 lbs. During sixty days she made a gain of 4 lbs a day.

Mr. A. C. Hallman gave the weights of some of his herd as follows: bull now at head of herd weighed when two years old 1735 lbs; a heifer twenty months old 1135 lbs, and a four year old cow 1431 lbs. He fed a number of Shorthorns which he knew to be high grades, 3 years old, and 2 year old Holstein grades, with the result that the Holsteins averaged \$5.50 more per head than the others. The Holsteins weighed about 1400 each.

MILK AND BUTTER PRODUCTION OF THE HOLSTEIN FRIESIAN

was the subject of the next paper, by H. Bollert, Cassel, Ont. He stated that daily records of 60 to 70 lbs are of ordinary occurrence, and very often even over 90 lbs is reached, such as Mink 96 lbs, Trijntje 95½, Rhoda 96¼, Hamming 99, Etheka 101, Pledge 110½, Jamaica 112, Pieterje 2nd 112½, Nerop 116 lbs in one day. These records should convince the most skeptical. When in 1872 Crown Princess made under ordinary care the wonderful record of 14,000 lbs (by far the largest at that time), it astounded the dairy world and was ridiculed by many, but this record, great as it was, has now been more than doubled, for we now find Aaggie with a yearly record of 18,000 lbs, Princess of Wayn over 20,000 lbs, Koningin van Friesland 3rd 23 000 lbs, Clothilde 26,021 lbs, and the great Pieterje 2nd with a record of 30,318½ lbs. Many two-year-old heifers have produced from 12,000 to 14,000 lbs per year, and as high as 18,000 lbs has been reached. Bonnie Queen, a four year old selected by the essayist last season produced nearly 10,000 lbs in six months under very unfavorable circumstances. The entire herd of mature cows owned by Messrs. Smith, Powell & Lamb averaged 17,166 lbs 1 oz in a year; 34 two-year-old heifers averaged 12,465 lbs 7 oz. The statistics of Ontario gives the production of the average dairy cow as nearly 3000 lbs per season. What a contrast!

Though only a short while since attention has been paid to the butter producing qualities, yet many cows have made from 18 to 20 lbs of well worked unsalted butter, and as high as 32 lbs in seven days has been reached. Amongst the most remarkable ones, Netherland Princess 4th, which as a two-year-old produced 21 lbs 10¼ ozs in seven days and 80 lbs 6 ozs in 30 days; Innkjes Mercedes, at two years old, 21 lbs 8 ozs in seven days; Aaggie 2nd, as a five-year-old, produced 105 lbs 10¼ ozs in 20 days, 304 lbs 5½ ozs in 90 days and during the same year made a milk record of 20,763 lbs. One hundred cows, all in one herd, made an average of 18½ lbs in a week; 57 cows of same herd averaged 21 lbs in a week. The public tests show that in 1883 the challenge cup given by the *Breeders' Gazette* for the cow producing the most butter in 30 days (open to the world and all breeds) was won by the Holstein Mercedes, she beating the celebrated Jersey cow Mary Ann of St. Lambert. At the New York dairy show in 1887 the Holsteins won 1st and 2nd prize for producing most butter in 24 hours, Jerseys and Guernseys competing; at the Ohio State Fair, 1887, they won 1st and 2nd; at Minnesota State Fair, 1887, they won; at Iowa

State Fair, 1888, at Bay State Fair, 1888, at Dakota Territory Fair, 1888, they won 1st prizes in every instance, competing with the special butter breeds. The facts clearly show that as a profitable milk and butter producer the Holstein Friesian cow stands unrivalled and alone.

The president made a few remarks on the paper, laying stress on the fact that the Holstein did not stop milking for two or three months, but were very persistent milkers. His statements were corroborated by Mr. Druit and Mr. Stevenson, the latter stating that they milked one of their young cows for two years continuously, during which time she kept up her flow to the last, and made ten pounds of butter per week on ordinary food.

THE MERITS OF THE HOLSTEIN-FRIESIAN

was the next paper presented, prepared by John Urquhar, Wisconsin. It was stated that in 1881 there were only 2782 registered Holsteins in United States, now there are 3400. He made prominent the fact that the strong feature of the Holsteins was their prepotency; the first bull he bought in in two years got in two years got 223 calves from a promiscuous lot of cows, and they came invariably white and black. Breeders should not lose sight of the dairy qualities to gain the beef form. A combined machine never works well. While not believing in a general purpose cow, he did believe in taking all the purpose out of them. He thought it was a bad mistake to over-feed for the sake of making sensational records. The Holstein cow has merits in her large flow of milk and its good keeping qualities; in her fine flavored butter and its good keeping qualities, commanding higher market price in the best market. The Holstein cow has merits in her kind disposition; in her strong constitution and strong prepotency in impressing her characteristics on other stock. She has merits at the pail, the churn and cheese-vat unsurpassed by any other breed. The president had also found the impressive power of the Holstein very marked, which he accounted for by stating that very few outcrosses had been made in establishing this breed.

THE QUALITY OF HOLSTEIN MILK.

was next placed before the meeting in an able manner by the president. He introduced his subject with a reference to the important position that the dairy industry had attained, and made prominent the need of a knowledge of the merits of the different breeds for the dairyman, if this position is to be maintained. A comparison was then made between the milk of the average Canadian cow and the Holstein. He found in the report of the Bureau of Industries for 1886, that the 31 creameries in Ontario required an average of 26 lbs. of milk to make one pound of butter, and in 1887 they required 25.1 lbs. This milk was obtained from grade Ayrshires, Jerseys, Devons, Shorthorns and other breeds. As there are no creameries supplied exclusively with Holstein milk, it is necessary to go to private dairies to get the requisite, reliable information in regard to the Holsteins. Smith, Powell & Lamb have kept accurate account of their tests, and a very large per centage of the Holsteins of Ontario have come from their herd. In 1888, they had 100 cows and heifers in their herd that averaged over 18¼ lbs. of butter in 7 days. It required 19 lbs. of milk, on an average, to make 1 lb. of butter. T. G. Yeomans & Son, in 1888, tested nine two-year-old heifers that averaged 12 lbs. 13½ oz. of butter in 7 days; four three year olds that averaged 17 lbs. 6¼ oz. in a week; and fifteen four-year-olds that averaged 20 lbs. 12.8 oz. in 7 days. 38 cows (including 17 two-year-olds) have averaged one pound of butter

from 21.3 lbs. of milk. Thos. B. Wales had six two-year-olds that averaged 16 lbs. 5 oz. of butter in 7 days, and six over two years that averaged 24 lbs. 2 oz. of butter a week. Twenty cows and heifers of his herd averaged one pound of butter from 18½ lbs. of milk. The Home Farm Fine Stock Co. found that it took on an average 20.62 lbs. of milk from their herd to make a pound of butter.

Taking the 168 head quoted, it will be found that they required on an average less than 20 lbs. of milk to make a pound of butter. The average Canadian dairy cow required from 25 to 26, and the comparison shows a difference of about 27 per cent. in favor of the Holstein. Allowing one half this per centage for better care and feed that these herds get, from which the Holsteins of Ontario are principally descended, it leaves the Holstein milk still 13½ per cent. richer in butter than the average dairy cow of Ontario, and as many writers on butter and cheese say that the butter fat and casein in milk is very nearly the same, we can safely draw the conclusion that the Holstein milk is 13½ per cent. better for cheese making also.

After a short discussion, the association then adjourned.

Spring Show of Clydesdale Stallions.

Such an array of stallions as gathered beneath the canopy of the Drill Shed on Thursday, March 14th, under the auspices of the Clydesdale Horse Association of Canada, augurs well for the future of the draught-horse breeding interests of Ontario. "The 'land o' cakes'" herself might well be proud of such an assemblage, containing, as it did, many of her highest honored representatives of the equine kind.

The association has every reason to feel gratified over the successful issue of their annual labors, for not only was the quality of the exhibit high, but there was also a goodly number of breeders and others in attendance.

The Canadian bred Clydesdales were first called. The entries were only three: Glenlee [1039], owned by Wm. J. Gregg, Claremont, Ont., in the three-year-old class, and O'Connor [1029], owned by John Bell, L'Amaroux, Ont., and Merry Boy [621], owned by Alex. Doherty, Ellesmere, Ont., in the two-year-old, and no entries whatever in the aged stallion class. Glenlee [1039], was a sprightly chestnut, and a credit to his exhibitor. He was sired by Mount Annan, imp., [471] (3851). His bone was good and well clothed with muscle, though some may have taken exception to his ranginess. Present appearances be speak this colt a future record of good account. He had no difficulty, being the only competitor, in capturing the sweepstakes gold medal, and also first in his class. Of the two-year-olds, O'Connor [1029], a compact, chunky horse of fair substance, filled the eye of the judge best, and thus secured first, Merry Boy [621] coming second.

A gallant lot were the four-year-olds and upwards, calling from the judge much nicety of discrimination in making the awards. On St. Gatien's nicely moulded and handsome form the red ribbon was placed amid the cheers of the onlookers. We cannot do better by way of description than to refer our readers to the frontispiece of our last December issue, where he appears in a life-like engraving, accompanied by a description and account of his imperial breeding and many prize-winning. He came as a representative from the stud of Messrs. Beith & Co., of Bowmanville, and right nobly did he do them honor. In the pink of condition, he appeared to grand advantage, and his exuberance of spirits showed itself in his sprightly bound and active step. Bounding Willow,

imp., [811] (5580), another of Messrs. Beith & Co's worthies followed a close second, and many of the by standers would have put him first, though he lacked the quality of the winner. Bounding Willow is a magnificently muscled horse of extra bone. His breeding is of the best, being a son of the far-famed Good Hope (1679), a son of the illustrious Darnley (222). His breeding is traced more fully, and prizes he has won, given in the December issue before referred to. The third competitor, and he was a foeman worthy of their steel, was Beattie & Middletown's (Atha, Ont.) Lord Lieutenant, a brown, of full quarters fore and aft, and nicely topped. His arm was muscular, and his bone of good size, combined with excellent quality. Taken all in all he is certainly a credit to his importer, Mr. Arthur Johnston, of Greenwood. Grand Times (imp.) [363] (2670), a low set son of Old Times (579), came next in order of merit in the judges' estimation. He is a chunky, muscular horse of splendid bone and deep, well rounded body. He is owned by Tyrwhitt & Jones, of Bradford, Ont., and is an importation of Graham Bros., Claremont.

The green ribbon, denoting that he was highly commended, rested fittingly on the broad back of Dumbarton Jock (imp.) [730] (5728), the property of Thos. Meagher, Doncas'er, Ont. He is a smooth and even horse, of blocky type, and gives every token of being a thrower of colts that would give a good account of themselves in the traces. His Royal Highness (2165) was his sire, and Rosie of Nestfield (6645), by Ivanhoe (296), his dam. Gay Prince (imp.) [813] (5796), a neat and trim brown, and a son of McCammon (3818), was commended. His dam was Lady Wildflower (4974), by Blue Ribbon (1961). He is but one of the many winners from the stables of Messrs. Beith & Co.

Among those that deserve mention other than the winners were the two horses shown by Messrs. Percy & Young, of Bowmanville, and a dark brown, owned by T. W. Evans, of Yelverton, Ont. The former firm entered Manfred (imp.) [68] (1758), a stylish horse with an extra grand top. Though nigh on ten years old he carried himself gaily, and looked as if many years of service were yet before him. Adventure (imp.) [727] was another from these stables. He was sired by the noted Good Hope (2146), dam, Sally of Auchenhessane (5986), by Farmer's Fancy (300). He had a "well-filled brisket i' pith and power," and a strong boned frame. Hatton's Pride (imp.) [1006] was the name of Mr. T. W. Evans' stallion, and in the minds of some he was deserving of a higher place, even though he was, undoubtedly, in excellent company. He is a low and lusty horse, with clean and free action, and limbs nicely feathered with silky hair. His sire was Jordanshaw (3343), dam, Bell 2nd, by Crown Prince (207). He was imported by his exhibitor in August last. Messrs. Graham Bros. had two entries—Barcheskie (imp.) [805] (4877) and Blacksmith (imp.) [1042] (555)—two good delegates and worthy of the patronage of any breeder. Barcheskie, as will be seen in our article in January last describing the stables, is the get of Crown Jewel (2708), by Orphan (1498); dam, Brenda of Barcheskie (4901), by Young Darnley (1874), the son of Darnley (222). His richness of breeding shines out in his personal qualities, for he is a horse of great value for stock purposes, being well muscled and footed, with a tightly ribbed and full body. Blacksmith was sired by Charmer (2014), dam, Kate. He is a horse of many good qualities and found favor with many.

Few have had the good fortune of before viewing such a fine sturdy lot of stallions as the three-year-olds. Such a brilliant galaxy of "the upper" ten of the

horse kind has rarely been gathered together in one class. Quality was the sheet anchor of all of them, with the exception of a couple that showed to a disadvantage in a group of such a high stamp.

"That day ye pranced with muckle pride"

is a fitting commentary on the behaviour of McBean, imp., [807] (6030) as the red ribbon blended its hues with the glossy dark brown of his satiny skin. A grand horse in grand trim he was undoubtedly. Though perhaps not as weighty as some of his companions in arms, yet his quality was unsurpassed. His action belied not his looks, for he moved with great freedom and precision. Of royal lineage is he also, being a son of the worthy Macgregor. A further account of his qualities, breeding and prize-winning will be found in our review, in our January issue, of the excellent stables from which he comes—those of Graham Bros., Claremont. Invader, imp., [921] (6854), a gay spirited and strongly coupled stallion, hailing from the stud of Messrs. Beith & Co., closely contested every point with MacBean. He is a well put together horse of many good parts, and has beyond question a future before him, if possible, more glorious than the past. His sire is Prince Henry (1257), dam, Damson (2512). A good third was made by Macindoe, imp., [538], owned by Alex. Cameron, Ashburn, Ont., and an importation of Graham Bros. He is a grandly finished horse of good quality, with excellent legs, nicely feathered. He is another of the many worthy sons of the great Macgregor, and is out of May Bloom (5367). The highly commended ribbon decked the fine form of Fitz James, imp., [806] (5763), by the well known Lord Marmion (2620). He is a very smooth horse and of neat, honest action. McRaw, imp., [818] (6057), a son of Garnet Cross (1662), and from the stables of Messrs. Beith & Co., came next. Though mingling with such choice companions, he did not suffer materially by the comparison. He is a horse that strikes the bystander more by the dearth of faults rather than by any one prominent feature of excellence. The Mayor of Carlisle, imp., [1032] (6080), owned by Jas. Torrance, Markham, Ont., well deserved the honor of being commended. He is a rangy horse, possessing a good front, and moves in nice style. Crown Ruby, imp., [839] (5681), a vigorous son of Crown Jewel (2708), comes from the worthy stables of Percy & Young, Bowmanville. He is a muscular horse, as evinced by well clothed quarters, and a wealth of muscle on his arm. His bone is good, and the same may be said of his quality. General Wolfe, imp., [844] (5800), the get of St. Lawrence (3220), and Marmer, imp., [718] (6073), a son of Lord Hopetown (2965), were two serviceable stallions that will, no doubt, prove throwers of first-class stock.

The tussle of the day occurred in the two-year-old class. The participants were MacClaskie [810] (6996), owned and imported by Graham Brothers, and Pride of Eastfield [819] (7113), the property and importation of Messrs. Beith & Co. That opinions at variance with each other should be rife among the onlookers is not to be wondered at when two such superior youngsters compete for honors. Though the red ribbon befitted MacClaskie in the opinion of many, it would have been equally meritorious in the opinion of as many more, to have been placed on the winsome form of the Pride of Eastfield. MacClaskie is a coming horse beyond a question. His body a perfect model of all that is desirable in this respect. He is a trim, solid youngster, with no waste about him, and he carries himself grandly. He is not of so rangy a type as Pride of Eastfield, his neck being shorter and his body nearer the ground.

His bone is excellent and his quality of the first order, making him in all a noble son deserving of such a sire as the illustrious Macgregor (1487). Pride of Eastfield [819] (7113) suffered no dishonor in being second to MacClaskie, for it was only a mere matter of opinion, not of faults and merits, that placed them as they were. Truly he satisfies Bobbie Burns when he says of auld mare Maggie, "And set weel down a shapely shank as e'er tread yird," for more excellent legs, sweeter pasterns and better feet have rarely met the eye, and would have satisfied in every respect the most particular of canny Scotchmen. Prince of Gourrock [624] followed them closely, he securing the very highly commended ribbon. He is owned by Mr. John Davidson of Ashburn, and is the get of Gallant Boy, imp., [303] (4387). He is a colt of much promise, having a well rounded, deep body, with heavily muscled quarter and good bone. Belford [518], a horse of well knit and muscled frame, owned by John Roach, Toronto, Ont., and MacLaurin (1041) (7020), a get of Macgregor's (1487) and owned by Graham Bros., were also in this class. MacLaurin is an even, square traveller, and has many qualities to commend for use in any stud.

The excitement ran high when the sweepstakes competitors—MacBean, St. Gatien and MacClaskie entered the ring, and it found vent in the clapping of hands and vociferous cheering when MacBean was made the recipient of the highest honors in the power of the society to bestow. MacBean, though a horse of medium size, has his qualities so happily blended, and appeared to such advantage, that it would be a queer freak in human nature, if he could not find an abiding place in the breast of all horse lovers. Quality shone from his velvety hide, from his neat and trim form, and profuse feathering of silky hair. St. Gatien, the invincible of last year, cast in a heavier mould, even taking his maturity into consideration, is stronger framed and fully heavier muscled.

The judge, Mr. A. B. McLaren, of Oakgrove Farm, Blandinsville, Ill., deserves all possible praise for the rigidity of his decisions, for never did he swerve from honoring the animal that came nearest the model he had in his mind. Though a number differed from some of the awards, yet it could be easily seen that he had an ideal constantly before him, and on this based his decision.

Trimming the Feet of Bulls.

We republish this article from Vol. I of the JOURNAL at the urgent request of one who has taken the JOURNAL since its inception, but has waylaid this particular number.

"The most common method of performing this operation is by first casting the animal and then proceeding to trim the hoof with saw and knife as may be desired. This method is now much discredited by advanced breeders owing to its cumbersome nature. It is liable to the further objection that it is apt to render a timid animal nervous for a long time after, inasmuch that he will show shyness on the approach of men.

"The Messrs. J. & W. Watt, the Shorthorn breeders, of Salem, have kindly described for us in detail the method now most commonly adopted by advanced cattlemen, which we here subjoin:

"The fore feet seldom require trimming. When, however, this is required, one end of an inch rope is securely fastened around the leg just above the hoof, the other end being passed over the back. This is drawn tightly till the foot is raised sufficiently, and held securely by a party on the opposite side. The other man then saws the hoof as desired with a fine tenor saw, taking off a thin slice more from the outside of the hoof and paring the inner part with a knife.

"In trimming the hind feet the animal requires to be placed in a stall just about his own length, and made to stand near the lining on the opposite side from the foot which is to be trimmed. A chain is then loosely

fastened around the outer post to which this lining is nailed, of sufficient height, which varies from say 1½ to 2½ ft. A hole may be required to be made in the lining to allow the chain to go around the upright. One end of a stiff round pole is then run between the chain and upright, the other end of the pole, which passes behind the animal, lying on the ground. One man draws up the head of the animal to the inner end of the stall, by operating on the ring in the nose; a second stands at the outer end of the pole; a third causes the animal to lift the leg desired over the pole, when the second man quickly lifts it up and holds it comfortably high, getting help if needed. The third man then proceeds to trim the hoof, cutting the toes square off at first, then proceeding as in the case of the front hoof described above, always taking care to keep shy of the quick. When the pole is first raised, the animal struggles for only a short time, leaning off to the adjoining wall. When the other hoof is trimmed, place the animal against the opposite wall, reversing the chain and pole. The advantages of keeping the hoofs well trimmed are too well known to call for further comment here."

Horse Breeding in Manitoba.

(From our own correspondent.)

The oldest settlers on the Portage plains were the first to attempt the raising of any horseflesh superior in quality to the shagginappie, which in a great measure raised itself. By a cross upon these natives, some good useful beasts were raised. But as a general impression prevailed that such beasts could hardly be killed either by exposure or hard usage, and this popular faith was usually acted upon, the native cross never attained the excellence it might have reached. Most of the really good horses in Manitoba down to the present time have been bred in Ontario, but it is only within the last four or five years that breeding from first-rate sires became an object of keen interest to practical farmers.

One strong reason for the disinclination to horsebreeding was the conviction, pretty general among farmers, that nothing very much better than a shagginappie could be raised here. This idea originated in the "grasshopper years." Farmers got impoverished, and for a time fairly paralyzed by that visitation. They could not afford to buy grain to feed to horses, which in turn got as poor as their masters. Wretched housing and bad ventilation, combined with mean feeding to make it nearly impossible for a mare to get comfortably over the period of maternity and to raise a decent colt. Scrub treatment produces a scrub, and though animals that nothing would kill, did occasionally raise a decent colt, it does not require a long stretch of retrospective vision to prove that as far as appearance went the popular disbelief in colt-raising was well founded. The colts of that period had a curious blend of blood in their veins. A big head, spindle legs, narrow chests, and flat ribs, might be found in one combination, where grade Clyde and a mongrel between Hambletonian and native, presented to the student of atavism curious and interesting problems.

This old feeling against colt-raising was not entirely groundless. Bad accommodation can be improved; defective skill can be made more perfect; but in a country where almost the only feed for four months is hay and oats, and the temperature ranging now and then pretty low, it requires special skill and judgment to turn out first-rate colts. The present feeling is all the other way. Every aspiring young man wants a team of showy young mares, and the finer they are, the greater is the risk of failure at one point or another. But this risk, though obvious to older stagers, has not hindered the importation within the last year or two of scores of car loads of mares from Ontario, generally in foal to good horses there. Some of these were bought for cash, others traded for the oxen or

useful old plugs with which the pioneer had started, and there is all the time a big trade for the dealers, mostly local men, who take notes for the balance, which the dealer may be unable to pay down. In this credit trade there is not so much "scalping" done as by the dealers over the line, who sometimes get chattel mortgages over all he owns as security for the poor homesteader's first fancy team.

It was the new men from the east who began the late confidence in colt-raising. Calf Mountain, Nelson, Pilot Mound, Stonewall, Carberry, Portage, each had capable settlers ten years ago who began at once to try breeding. Even & Lawrence's splendid Clyde at Ruttanville, and McCaig's "Black Duke" Percheron, at Carberry, were choice horses, not since surpassed, and Trick at Calf Mountain, was an early and successful breeder. The Mollons at Stonewall, and I. E. Smith, of Brandon, may be worthily coupled as examples of importers who did good service in recent years. But the country is too new and work too scattered, consequently good horses are over-traveled and under-paid, and a host of culls from the east and south have found business, and even taken prizes, for want of better shift.

The general purpose sire is at the present time far too common in Manitoba. There are draft horses of different breeds, with reliable pedigrees, whose record has been satisfactory, and there are even cases of sires with mixed blood, which have left many good colts behind them; but there is a decided feeling among practical men that the time has arrived for making a special effort to introduce a considerably increased number of pure-blooded horses. There is less inclination for fancy blood now than five years ago. For one thing the spread of branch railroads has made it less necessary to have a team that could run home 30 or 40 miles after delivering a load of wheat at the elevator. Besides, the attempt to breed from a plain country mare and a Hambletonian has produced too many monstrosities, and the draft horse is the popular figure at present. To encourage first-rate horses the province must get out of the old rut of \$25 prizes for the best stallion. In the home of the Clydes a bonus of £50 to £100 is paid by the farmers' club of his district besides the ordinary fees for service, and it is not the surest way to tempt valuable importations to offer a £5 prize here for a horse that could get a £75 bonus at home. There are some capital Clyde mares in the country, but the idea of raising choice stallion colts within the country is rather premature. It is not every good farmer even in Scotland that can breed stallions, and the average Manitoba farmer will find it most profitable to aim at a good blocky, well-graded Clyde as the reward of his breeding enterprise. In this connexion it ought to be mentioned that the Messrs. Beith, of Bowmanville, have recently started in Winnipeg a sale stable for pedigreed Clydesdales.

But though everything has not been done in the best way, or produced the best results, the number of promising colts has been a marked feature of every country fair, all over the province. Take the county of Dennis for example, a settlement six years old, which last fall had fairs at Virden and Oak Lake. There were 200 entries at Virden, and not much fewer at Oak Lake in the horse class alone. The rapid increase in the number of neat mares from 1,100 lbs. to 1,300 lbs. within the last two years is strong testimony that the farmers of that very live county have full faith in colt-raising, as the most promising and profitable of all forms of stock-raising. The rapid increase in the cultivated area keeps up the demand for horses, and though their zeal may not always be tempered

with discretion, this confidence in the future of the draft horse is well founded. The present season shows a greater importation from the east than ever before of farmer's horses, the natural result of a large immigration.

The Portage La Prairie society has made a courageous attempt to get over the old foolish \$25 prize plan. They offer for draft sires at their spring show, on April 10th, \$150 in two prizes for a registered draft stallion to serve in the district the coming season, and \$100 for a thoroughbred sire, which, according to Dr. Rutherford, their local veterinarian, would produce from a good rooomy mare a more clever and lasting farmer's horse for our light soil than the lymphatic cart horse. Padding is a bad thing in a horse that may have to go home from an elevator at a six mile gait in winter, and from 1,200 lbs to 1,400 lbs. of good live horseflesh is his ideal—at least till we want lorry-horses for our city streets.

Swine—Their Breeding and Management.

Next to cattle swine are the most important to man as an article of food, for not only are they most profitable consumers of every eatable species of offal, but there are no animals that return so great a quantity of flesh in return for the food they consume, likewise there are few situations in which they cannot be kept with profit. The hog, although it has the character of being filthy and dirty in its habits, is, when in its wild state, a cleanly animal; it certainly indulges in wallowing in mud and stagnant water, especially in hot weather, for the purpose of cooling its excessive heat and to protect itself from fleas and other pests of a similar kind, in the same manner as does its first cousin, the rhinoceros, but its dirty habits when domesticated are often rather a matter of necessity than of choice. In its wild state the hog is found to feed chiefly upon roots of vegetables, only devouring flesh when pressed by necessity or when chance brings it across some dead carcass. The wild hog is of all other quadrupeds the most delicate in its choice of what vegetables it shall feed on, and rejects a greater number than any of the rest. The cow, according to Linnæus, eats 276 plants and rejects 218, the sheep eats 387 and rejects 141, the horse eats 262 and rejects 212, but the hog, more nice in its provisions than any of the former, eats only 72 plants and rejects 171. In its domestic state, however, the hog is omnivorous, and little comes amiss to him, yet if allowed a choice of diet he always selects that which is the most nutritive. The hog is naturally a comparatively long-lived animal, having been known to live over 30 years when wild, but when domesticated there are few opportunities of ascertaining his longevity, as his life is usually cut short at an early age. It is not proposed in this paper to touch on the different breeds of pigs, of which there are many, and each has its strong partisans, but to confine it solely to the breeding, rearing and feeding which are to a great extent applicable to all breeds.

The first thing in pig raising is the selection of breeding stock, and as in all gregarious animals the male is usually of primary importance, it will perhaps be well to give precedence to the boar. He should be well haired and have a short face with a mild but masculine expression, his legs should be short and wide apart to allow room in front for the vital organs, and behind for the growth of the leanest part of the hams. He should stand erect on short, strong feet; his shoulders should be broad and his back long, with well sprung ribs, not tied in behind the shoulders or round the heart; his loins should be wide, carrying the breadth back to the

hams, giving strength of back and plenty of room in the region of the kidneys. Last, but not least, a pure-bred male should always be used, and if possible a registered one. There are many animals claimed to be pure-bred, but without the evidence of the certificate there is no proof of their breeding, much less of the stock they will breed. Every breeder, even when registered animals are bred from, will obtain some undesirable stock, and what can be expected when males are used where antecedents are only known by tradition. Moreover, a pedigree is a guard against in-and-in breeding, which practice will soon tell against swine, and too close breeding will soon reduce their constitutional vigor. For these reasons it will be found more profitable in the long run to produce a pedigreed boar of some well known and reliable breeder, care being, however, taken not to run into the opposite extreme, and buy all pedigree and no pig. A good animal and a good pedigree should be the motto of the pig raiser as well as the cattle breeder.

The boar having been purchased, he should be placed in a dry, well ventilated house, in a well fenced lot of ample dimensions to run in. Exercise is indispensable, and like all stud animals the boar should have plenty of it, or he will soon become stiff and impotent. He should not be used until he is eight months old, and while young as sparingly as possible, one service is sufficient and is as good as a dozen. As to the number of sows a boar should be limited at different ages; a well known breeder gives his opinion that at eight months old he should be allowed one sow a week, at ten months old two sows a week, at one year old one sow every other day, while at eighteen months he may safely be allowed one sow a day. Every breeder should have a breeding crate so constructed that the sow can be confined, and arranged so as to keep a large part of the weight of heavy boars off the sows, while by the use of a moveable platform behind the sow, a young boar can serve the largest sows with ease and success. The boar should at all times, but especially when young, be treated with kindness, and he will soon become very tractable, he should never be handled with a club as is too often the case, for if gently treated a switch or whip will be found quite sufficient to manage him with. As to the feed of the boar, vigor rather than fat should be aimed at. He should of course be liberally fed when young, so as to obtain the most rapid growth consistent with good health, especially if much used and so as to keep him from running down. For this object, chopped oats and shorts with a small proportion of peas, mixed with the kitchen slop and sour milk will be found a suitable diet. He should always have access to plenty of pure, clean water, especially during warm weather, while vegetables must not be omitted, if the supply from the kitchen garden should prove inadequate, he will gratefully accept weeds, particularly wild purslane and pig weed, plants to which he gives a decided preference.

The brood sows should be of the greatest length obtainable, legs short, broad back with straight top and bottom lines, short head with good width between the eyes, well haired and not without twelve or more good teats. That she should be a good milker, it is needless to say, for the more milk the better the young pigs will do, consequently it is advisable always to feed them with a view to developing their milking qualities as well as good growth.

In selecting a brood sow, she should if possible be particularly good in points where the boar may be deficient, and it is important that her disposition be mild and quiet as with kind treatment and an occasional grooming she will soon become quite gentle, a matter of

considerable moment, especially at farrowing times.

As to the time when sows should be bred, no strict rule can be laid down, as it is a matter subject to numerous variations; sows of the smaller and early maturing breeds may frequently, without disadvantage, be allowed to breed when younger than others, while very large coarse sows are sometimes bred at an early age with a view to their becoming finer in form, but it is apt to impair the constitution, and result in a lack of strength and vigor in the litter, and the opinion of the best breeders is, that to obtain stronger and better litters it is desirable that the sow be fully a year old before she is bred.

Sixteen weeks is the period of gestation of the sow, and no animal is more punctual. A week before farrowing time she should be placed in a yard and pen by herself. This will give her time to become accustomed to her new abode and will remove an additional cause of excitement at the critical time. Too much bedding should not be given her, and as the young pigs are very liable to be overlaid by the sow, it is advisable to fasten a plank 7 inches above the floor, round the two sides of the corner in which her bed is made, so that the young pigs may creep underneath when the sow lies down.

Young pigs are very sensitive to cold, and for early litters, if the weather is severe, it is safer to sit up with the sow and remove the young pigs, as they come, to a warm place. As soon as all are come, the sow should have a warm mash, after which, if the young pigs are brought to her, she will usually lie down and allow them to suck.

Occasionally a sow proves cross and kills and eats her young ones. From what cause this habit arises it is often difficult to say. Some attribute it to coitiveness in the sow, others to the innate disposition. Various remedies have been propounded. Some recommend giving her whiskey until she is stupefied, or a sedative, such as aconite, in some warm slop, and allowing the young pigs to suckle her while in a comatose state. Others recommend giving her lumps of fat pork or grease until her unnatural appetite is satiated. In the last case, it is easy to see that the grease would have a relaxing effect if the sow was bound up, while the whiskey or sedative would allow time for the excitement to be allayed, but when once a sow has attempted to kill her pigs, the only sure cure is to turn her into pork.

AGRICOLA.

Winner of Draught Sweepstakes at Chicago.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I would feel obliged to you if you would give your readers the name and breed of the horse that took the draught sweepstake prize in the aged class, competing against all breeds at Chicago Fat Stock Show of November, 1888.

Beeton, Ontario.

SAMUEL SMITH.

The horse that captured this great honor was a Percheron, La Ferte 5144 (452), by name owned by Mr. W. Danham, DuPage Co., Illinois. He is credited with being "the handsomest draught horse in the world," besides being a thrower of colts, marvels of excellence, as it is said, inheriting from their sire that long graceful neck, high carriage, and superb action that has won for him golden encomiums from all.—ED.

"I am well pleased with your paper. My card in the Breeders' Directory I am sure brings me in over one hundred times what it costs each year. I am only sorry I cannot induce more of our farmers to take your journal. It should be in every farm house in the Dominion."—Joseph Youill, Carleton Place, Ont.

The Dominion Sheep-breeders' Association.

In outlining our line of advocacy for the year in the January number, in reference to questions of general interest, we signified our intention of agitating for a sheep-breeders' association for the Dominion, and already, before three months of the year have gone, this organization is an accomplished fact.

The position we took at that time was not of the most hopeful character, as the temper of a number of the breeders in reference to the subject had already been taken at an initial meeting, called on our suggestion, in Toronto, last September, and held in the Albion Hotel, the result of which was anything but reassuring, the trend of argument at that time being largely negative in its character, and the measure of support even less reassuring.

The result, however, is another instance of the wisdom of advocating measures because they are *right* in themselves, and not simply because they ride high on the crest of the incoming wave of popular opinion. Place a portion of truth in the popular mind, although in communicative quantities, allow it time to become rooted, and in due time it brings forth fruit to be gathered by all earnest workers who can afford to labor and to wait.

The wisdom of our contention became apparent to all interested who gave it consideration. Amongst others Mr. F. W. Hodson came out with an active and cordial support of the measure, hence the early completion of the organization in Toronto at a meeting of the sheep breeders held on the 13th March at the Albion Hotel, Toronto.

Mr. John Jackson, Woodside, the veteran breeder of Southdowns, moved in the direction of organization, the motion being seconded by Professor Shaw, and supported by J. Campbell, jr., Woodside; R. Marsh, Richmond Hill; James Russell, of the same place, and others.

Prof. Shaw dwelt upon some statistics relating to the sheep industry, which he thought were of no little significance. In Ontario, since 1884, the number of sheep in the Province had declined by 494,572 head, a fact which in itself pleads with silent eloquence that was more than interesting, in behalf of the necessity for organization to prevent declination of numbers in a province capable of sustaining more than twice the number of sheep it already possessed, without being overstocked by a single head. At the present time there were but 1,396,161 head of sheep in this Province, or less than seven head to each one hundred acres of the land, whereas at least twelve head could be kept, on an average, on a farm of this size, practically without cost in summer, as they would simply act the part of scavengers in picking up odds and ends of pasture where cattle would not thrive. Mutton was one of the daintiest and most wholesome of our meats, and if our farmers would but kill, on an average, for their own table, but half-a-dozen head a year, and this number would not be large, they would themselves consume a number every year, almost equal to that at present in this Province.

The various articles of the constitution were put one by one by the President, Mr. J. C. Snell, Edmonton, and adopted by the meeting; and at the evening session, creditably presided over by the President elect, Mr. R. Miller, Brougham, a number of valuable papers were read and discussed, all bearing on various phases of the sheep industry.

The following are the officers for the current year: President, R. Miller, Brougham; Vice-President for Ontario, J. Russell; Vice-President for British Columbia, Mr. Kirkland; Vice-President for Mani-

toba, Wm. Thompson; Secretary, F. W. Hodson, London, Ont.; Directors: J. Campbell, J. Jackson, Wm. White'aw, John Snell, Capt. Rolph, R. Barley, Peter Arkell, Wm. Walker and T. Palmer.

The association, we fully believe, has entered upon a wide field of usefulness. The extension of the sheep industry at home, the choice of suitable judges at our exhibitions, the preparation of wool for market, and the markets themselves, the protection of sheep from the ravages of dogs, the dissemination of information on this great industry through the press, and the discussion of subjects pertaining to it from time to time at the various meetings that may be held, and the publication and distribution of the same, are amongst the items that can profitably engage the attention of the association, and possibly sometime the propriety of establishing records, though, for the present, this is not meeting with much favor.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

The Horses of Nova Scotia.

There have been friends of the horse in Nova Scotia for some thirty or forty years, and importations have been made at various times, principally of thoroughbreds, during that period, so that to-day there is quite a sprinkling of good blood in our horses. What they were originally it is extremely hard to say, as it is very difficult to ascertain from what source or sources the first stock was obtained, and the great mass of our horses are set down as natives. This, of course, they are not in the strict sense. All are from importations made at various times, and probably at the date of the principal settlements. The newer clearings or settlements would naturally be supplied from the older ones. In eastern Nova Scotia the popular opinion pronounces the horse of the country to be French, and undoubtedly a large part of those of the Island of Cape Breton are the same in appearance, and no doubt in blood, as the horses of Lower Canada. These horses have been very largely bred and sold into other parts of the province, and very probably constitute the mass of the horse stock in the counties of Pictou, Anigonish and the four counties in the Island of Cape Breton. But in addition to these there are some localities in Pictou county where heavier horses have for a long time been known. These were very probably introduced by the General Mining Association at Albion Mines. That company have at times had stallions which, from their appearance, and particularly from the feather on their legs, would seem to have been imported from England. The farmers in some sections in the neighborhood of the mines had very fine teams of draught horses, in which they took much pride, and which were heavier than the French horse of which mention has been made, but were probably the result of a cross of the heavy horse on the mares of that breed.

Until recent times a horse was a horse, and a man selected a light or a heavy horse as best suited his purpose, but asked no questions, and probably thought not at all of breed; and as to pedigree, that was never mentioned at all. Now, however, there is a rapid advance. The Percheron and Clydesdale are known and compared, and the distinction of breeds is being recognized. Of the Shire horse nothing at all is known here except through the specimens which are to be found in the neighboring Province of Prince Edward Island, and in the meantime the Clydesdale and Percheron hold the field.

Many heavy horses have at times been introduced, but their visits were rare and at long intervals, and probably not one of them was pure-bred. In consequence the impression made has been slight and the

blood has been generally lost in that of our ordinary stock, which preponderated immensely in numbers.

Our native horses are admirably adapted to form a foundation for the construction of a new race or races by the employment of pure-bred sires. They are healthy, hardy, sound and of great endurance. They have very fine, clean legs with excellent hoofs, and are of surprising strength for their size. In addition, many of those from the eastern part of the Province, and particularly from Cape Breton, are natural trotters, some of them showing the pacing gait, and no doubt contain the same blood elements which in the Pilot, St. Lawrence, and other Canadian strains here, had large part in producing that composite breed, the American trotting horse.

No better foundation could be found on which to work, with the hackney or American standard-bred trotter, for the production of a race of carriage horses. They already have the inclination to trot, and the quality of bone to enable them to work to great ages without unsoundness, and such crosses as will increase the size, style and trotting instinct, cannot fail of producing a splendid race of roadsters. They also cross well with the thoroughbred, the progeny acquiring more size, pluck and bottom, while retaining the trotting instinct to such an extent as to make fine drivers. The work of improvement has been very slow in the past. A few horses have been at various times introduced, and have been sired principally by English thoroughbreds. But there have also been brought from the United States horses of several American families. The ubiquitous Morgan stock has been here in several of its branches, generally called simply Morgans, and revealing itself in the chestnut livery of the race; but there have been also Morrills, and Knoxies, branches of the same breed. We have also had several horses which were called Messengers, and were probably descended from that Messenger strain which early found its way into Maine. The greatest benefit has been derived from two horses about which unfortunately it is not easy to ascertain a great deal. The first, "Bellfounder Morgan," was a small chest-horse imported by a Mr. Palmer, of Windsor, from Vermont, and which may have been a horse of that name which was foaled in Colchester, Chittenden Co., Vermont, in 1836, bred by Alfred B. Allen; got by Putnam Morgan, son of Woodbury Morgan, son of Justin Morgan, his dam said to be an English thoroughbred mare. This horse, on his first coming to the province, was neglected on account of his small size, but all his get were superior roadsters, and he was, after a time, more highly valued. One of his sons, Lord Nelson, produced by a Cape Breton mare, proved a wonderfully successful sire, and begot more fast trotters than any other horse which has yet been bred in Nova Scotia. The second was a horse called Black Hawk, imported about 1853 from Long Island, and probably a descendant of Long Island Black Hawk, of the Bashaw family. This horse was largely used in Nova Scotia, and his get were of good natural speed, and some of them, under more favorable circumstances, would have proved very fast. As it was they were the principal source of supply, when a road horse was required. Both these horses were much superior to the native stock, but their get was largely bought up and sent out of the country, and it never occurred to any one to inbreed their descendants so as to fix a strain. In consequence the blood is now reduced to small proportions and practically lost, as a distinct strain. It still, however, possesses much value in alliance with the new blood of allied families, which is being rapidly introduced. For the most heart-breaking work of the pioneers is about over.

Men now begin to understand pedigrees, to prize a thoroughbred cross, and to pile cross upon cross. Many who were not interested as long as it was a matter of trying to improve, for the good of the country, will now invest as a matter of business, seeing a prospective profit in supplying the wants of those who are beginning to breed horses for draught and horses for speed.

We have begun to move. In 1888-9 there is more evidence of increasing progress than ever before. In these two years we have considerable importations of Percherons and of Clydesdales, and more promised, and a number of trotting-bred horses are coming in. Nearly all the great American families are represented. We have several of Almont's descendants; and two good horses by the famous Nutwood. In Prince Edward Island, which is quite within reach, is Administrator, a son of the great Hambletonian. In Truro, centre of the province, is All Right, a successful sire, and Melbourne King, a son of Mambrino King. These have been here for some time. Now, however, there is an evident intention on the part of some of our horsemen to aim at the best and most fashionable families, and in all likelihood, within two years we will have representatives of Geo. Wilkes and Electioneer and a son of Monaco by Belmont. A son of Hermes has been imported this year, while some others are casting longing eyes at the descendants of Sultan. But the great indication of a good time coming is in the value which men now begin to set on families. No great improvement can be made without thoroughbred dams, and it is scarcely possible to make any headway so long as a breeder can be tempted to part with a good and improved mare. Hitherto men did not set their hands to the plough with the intention of going to the end of the furrow, but if they found themselves owner of a good mare, would sell her as soon as an offer of a good price was made, and so would drop back to the place from which they had started, instead of keeping their advantage by using their improved animal as a stepping-stone to one higher-bred and better than the first. Now our farmers are beginning to prize their best mares, and even better, to buy at a good price, mares which have one or two crosses of improved blood, for breeding purposes. In Prince Edward Island mares can be bought with two crosses of draft-blood, and these are in demand; but still we are not as far on as Ontario, nor do these mares yet realize as much as they are really worth. But we are moving, and both in draft and roadster stock are beginning to work up. We begin to value pedigrees, to prefer a mare with two crosses before a mare with one only, and to add to the value of that which we have by acting upon the recognized principle that like begets like. In the future we shall not see so much of promiscuous crossing. A draft mare, or a roadster mare, will be bred to a horse of her own kind, and the dollar stallion is on the decline.

All this is as it should be. Nova Scotia has large tracts admirably adapted for horse-breeding, on limestone formation, with good grass and water, a mild climate, and good markets within reach. By all appearances the horse may displace the red herring, or at least dispute his place and pre-eminence as a maritime product. M. R. L.

"I have received the beautiful lithograph picture of the Ontario Agricultural College, and am very well pleased with it. It is worth more than the subscription to the JOURNAL. I hope your subscription list will be much larger this year than it was last, as your journal is a great credit and is of much value to any one interested in stock breeding or farming. I thank you once more very much for the beautiful premium."—L. O. Lemieux, Brandon, Man.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

The History and Breeding of Bates Shorthorns.

BY RICHARD GIBSON, DELAWARE, ONT.

(First Paper.)

THE LIFE AND CHARACTER OF THOS. BATES.

In writing a short account of Mr. Bates' cattle and the early history of his tribes, perhaps a condensed biography would be in order first, followed by a rambling account of his purchases and general breeding, and also, where incidentally necessary, his contemporaneous breeders may have to be referred to, to make this monogram swing properly—then a history of the tribes he was cultivating at the time of his death, and concluding by drawing deductions from his breeding of and developing that royal race of cattle with which his name has been so intimately connected, and whose independent views upon breeding might perhaps at the present day be cited to his humble followers "to point a moral."

Thomas Bates was born at Matfen, a village in Northumberland, in 1875. At an early period he removed with his father to Haydon Castle, near Corbridge, and commenced his studies at Haydon Bridge. He subsequently went to another establishment at Whitton-le-Wear, and completed his education at Edinburgh University.

In early life his attention appears to have been directed towards the bar as a profession. This could not, however, have suited with his own tastes, as he would seem to have engaged in law with but little of that perseverance which became so striking a characteristic in subsequent pursuits. His actual start in life may be dated from his occupation of one of his father's farms called The Eccles, on the banks of the North Tyne, and near the town of Hexham. Still he did little more than commence here, for in 1800 we find him removing to Halton Castle, which he occupied for 21 years; thence to Ridley Hall, on the banks of South Tyne, and at length into Yorkshire, to the Kirklevington (sic in all old manuscripts) estate. (In the early volumes of the English herd book, when Mr. Bates made his entries he spelled the name with an a, Kirkleavington.)

It would be presumptuous of me to attempt to paint the domestic side of his character as a man, and a neighbor, but perhaps a few extracts from various writers would enable us to judge pretty correctly the force of character, the original genius, the independence of the man, who disdained to do a dirty action as much as he detested one who did; one who was not intended as a follower, but a leader, and one who by marked indifference to the servile customs of the times was often dubbed selfish and ungrateful, or, as in our phraseology a "crank."

"Sheldrake," (the Rev. Holt Beever) in the *Agricultural Gazette* of some years ago, writes:

"By the kindness of a friend I have before me a batch of letters from the pen of the great Kirklevington breeder, the study of which, though they were not supposed to contain much if anything of importance, has still afforded me, as respects my researches, great help. It has thrown light upon the doings of those days. It clears up doubtful facts of Shorthorn history (doubtful simply from want of sufficient information), it gives you a kind of "kettle-drum" talk with the spirited enthusiast to whom we breeders owe so much, that is vastly agreeable and most instructive. I have always been led to imagine he was a crusty, overbearing old dog, who, in his obstinate adherence to short-sighted and ill-supported theories of his own manufacture, destroyed much claim which he might otherwise have had, to be a leading authority on the breeding of Shorthorns. Instead of which I decide him to have been a capital man of business; shrewd, but most honorable in all that concerned it, whether the buying of stock to fatten or speculation in the for-

eign grain market, or the saving of his hay crops, or the sowing of his turnips, etc. Not a word, even in the most unguarded moment, drops to show that he has done or was capable of what our transatlantic cousins call a 'smart thing.' The surface of the correspondence breathes only candor, honesty, enthusiasm. Political subjects seem to have fired him quickly, but even then he had only the agricultural interest generally at heart, and no private object to serve. The correspondence gives one the idea of a fine old English gentleman's mind, and the prejudice one had imbibed from hearsay against the pig-headed old chieftain has melted like the snow before the genial influence of these faded but ample documents. That he could ruffle up upon occasion, I have not the least doubt, and would stand no bullying; but under management of a light hand, could be the pleasantest of companions. It is possible that he did not appreciate contradiction, as is not to be wondered at in bold pioneers. It is very pleasing to read the prompt and repeated offers of assistance which he makes to those who approve his theories, by loan of bulls, counsel in selection, etc."

Mark Lane, 1850, writes: "As a man there were few who enjoyed a wider popularity. The employment he gave to the poor did not more ingratiate him in their favor than the unvarying and unmingled kindness he at all times displayed, whether in providing for their cheap and comfortable shelter in his cottages or ministering to their wants in sickness, infirmity, or age. His kindness as a neighbor was beyond all praise. Scarcely one of the farmers, whose cold, barren clay farms surrounded him, but could bear witness to some act of disinterested sympathy; and a stranger would have witnessed with surprise the influence his name and his opinion had upon them, while his word would be more relied upon than many men's bond. . . . Convince his judgment or appeal to his feelings, he was gentle and yielding, but once arouse his opposition and he was as untiring in his warfare as he was staunch and unflinching in his character. His liberality was great, and the good he did was so far beyond his means that we believe we are betraying no trust and hurting no feelings in saying it was the means of encumbering his property. It was, however, Mr. Bates' character as a Christian which gained him the large amount of respect he so generally secured; and an undeviating course of moral conduct absolutely untainted and unimpeachable, gave him a standing which, though it might for the moment excite the thoughtless, generally created a real respect in their minds. At a period when a profession of religion was by no means so fashionable as it is at present, he would dare ridicule and scorn, and indeed, by his energetic support of the Bible Society, and his exertions to circulate the sacred volume, obtained the nickname of "Bible Bates."

But suffice—from the above we gather he was a man of great force of character, indifferent to the opinions of others, thoroughly independent, and one can trace the same indifference, the same independence in the selection, breeding, and crossing his herd of Shorthorns, that he exhibited in his daily intercourse with the world. He was no servile imitator, no follower of fashion nor worshipper at the shrine of any breeder. A great student of pedigree, knowing personally all the old stocks and having great faith in certain strains of blood he set to work and so concentrated, manipulated and interwove those old sorts which he so unhesitatingly advocated, as to leave a herd that since its dispersion at his death has wormed its way into every English-speaking colony. Australia sends back their golden ingots, and import Dukes, and Duchesses in return at from £1,000 to £2,000 each. America sends her greenbacks and outbids the Britisher on his own soil; and now South America, in what we would have regarded a few years ago as but semi-civilized Buenos Ayres, etc., is worshipping the golden calf, and Dukes and Duchesses and kindred sorts, are being imported there at a rate never before known in the history of the race. And what of our own colony? Canada has the proud distinction of first paying 1,000 gs. for a Duchess, and from the offspring of that cow and a bull bred in America descended that great sire, Duke of Connaught, sold for \$22,500;

and can we not claim for Canada that the climate and change of feed, etc., did something towards developing the best Bates bull of modern times?

A herd whose history is not yet written, whose history cannot be written until Shorthorns cease to be—a herd that has been left as a legacy to the breeders of the world, to sustain and perpetuate the handiwork of the great master-workman, or by bad management, bad selection of crosses, or penurious treatment, to discredit and dishonor upon a name and upon a breed that deserve the gratitude of every breeder of Shorthorns, every breeder of good cattle, and of all interested in good beef, milk and butter.

The Desired Mechanism of a Draught Horse.

(First Paper.)

The observer watching the honest pull of an ideal draught horse as he bends his energies and plys his muscles to the moving of his ponderous load, and seeing the working of the levers and the cords as the tension mounts to its height; or the bystander, noting the free and easy stride and princely carriage of the active driver, as he makes the wheels hum their merry tune, cannot but be one with us in saying that a high type of either class with qualities happily adjusted and coupled, is beyond question the noblest of the dumb domestic animals. A mechanism that bears the brand of utility and beauty is theirs, with a mind intuitive and receptive, however much it may be dwarfed by their being slaved because dumb, and abused, because submissive.

Among what may be termed the general qualities that greatly enhance the merits of a draught horse, those of weight and form are perhaps chief. The horse possessed of weight has momentum to aid him, and thus is better at a pull, but he must necessarily lose in activity, though it may be but slightly. The light-soiled farm asks for nothing over fifteen or sixteen hundred, while the city lorry calls for a ton of horseflesh, or more. The stout, blocky horses, free from length of body or of leg, are not only, as a rule, good keepers, but also enduring workers. A handmaid of solidity of form is symmetry. Not only is it pleasing to the eye for all the qualities to be evenly balanced, but it ensures against awkwardness of movement.



A good head, crest and neck.

A nice, clean-cut head, free from coarseness, well set on, and jewelled with a pair of mild but large and bright eyes, forms a fitting prow for the noble vessel which it should head. The

face of a horse is an open book, on which is imprinted in legible lettering an account of his inner character, which he, unlike his subtle superior, is not able to deface. Breadth between the eyes denotes that the brain does not lack development for want of room, while it may be taken that a horse narrow between the eyes and the latter sunken and piggish in their nature, is sure to be very susceptible to bad influences, and will early learn to kick, bite,



An honest face.

or crib. The large-sized nostrils are indicative signs of a lung capacity of the first order. While fine-pointed, medium-sized ears are an embellishment, the width between the jaws is a point of more utility, as it allows the head to play freely on the neck if necessary, and permitting the latter to bow nicely. Quick-

moving ears denote a temperament of a like nature, and a horse that is continually endeavoring to hear what is going on behind him should not be trusted. While not requiring that the neck be "clothed with thunder," yet it very much conduces to the good appearance of a horse, be he draught or driver, to have a clean, well muscled neck, of good thickness, and neatly gathered at the throat. In a stallion a full crest materially adds to his appearance, as well as denoting masculinity. The shoulder conformation, both in slant and mould, is of the greatest importance. A long, slanting shoulder blade or scapula gives quick play to the fore-legs, the angle between the shoulder blade and the humerus (the bone that runs from the point of the shoulder to the elbow) being lessened as the slant increases. This oblique shoulder does not favor the extra knee action that finds an abiding place in the favor of many lovers of strong carriage-horses, but the reverse



An oblique shoulder, favoring quick action.

of this is rather the case, the upright shoulder necessarily calling for more. For leverage it can easily be seen that the upright shoulder has the advantage, though the action must perforce become more stilted as the slant lessens. In some horses it may be noticed that though their shoulders have the desired set, yet they are constantly sore, which is in many



A strong shoulder.

cases due to bad workmanship on the collars, yet it is often to be traced to badly-formed shoulders. They offer no hold or support for a collar, due to the fact that their shoulders are round and not prominent enough, thus giving but little backing to a collar.



A good front.



Clear action, due to good shoulder conformation, short back, long underline and good quarter.

Inquiry re Clydesdale Stallion.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Will you kindly inform me as to whether there is a stallion registered in the Canadian Clydesdale Stud Book by the name of The King of the West. There was a horse travelled in this district under that name in the season of 1886-87, and it was stated by the groom that he was a pure-bred Clyde, raised, I believe, by Clark Bros., somewhere in Ontario. As he was largely patronised by the members of this agricultural society, we would like to know something more in regard to his pedigree.

JAS. O'BRIEN, Sec. Windsor (N. S.) Ag. Society.

There was a horse called A One alias King of the West, imp. [194] 524, registered in the Clydesdale Stud Book of Canada, and he is the only one that is given as being owned at the time registered by John Clark, Carleton Co., Ont. This horse, however, is given as a foal of 1863. His breeder was Wm. Kerr, Scroggiehill, Scotland, and he was imported in 1870 by Robt. Ferris, Richmond Hill, York Co., Ont.

As to his pedigree, he was sired by Lochend Champion (448), out of a Clyde mare bred by And. Logan, Scotland. Lochend Champion (448) must have been a horse of some merit if the prizes he has won may be accepted as a test. In 1861 he won 1st prize at the Highland Agricultural Society Show at Perth; gold medal of the same society at Kelso, 1863; 2d prize at the Royal of England at Battersea, 1862, and in 1865 he won the Glasgow premium. He has sired such horses as Enterprise (281), Volunteer (897), Young Barnett, and such mares as Jess of Oakbank (132), Nannie of Balig (375), and Nell of Glamis (409), etc.

The sire of Lochend Champion (448) was Prince (603), winner of the second prize at the Highland Agricultural Society Show at Glasgow, 1850; the Brechin premium horse in 1851, and Lanarkshire in 1852. Clyde (155), the sire of Prince (603), won 1st at the Highland Agricultural Society show in 1844.—ED.

The Shropshire Sheep.

BY EDWARD GOODWIN PREECE, LIVE-STOCK AGENT, SHREWSBURY, ENGLAND.

(First Paper.)

The Shropshire sheep, which by reason of its inherent valuable attributes, has so firmly established itself at the head of all other breeds, not only in Great Britain, but in many other quarters of the globe, is descended from a breed which upwards of two centuries ago was known to exist in the county of Shropshire and part of the adjoining one of Stafford. As far back as 1340 Shropshire produced a breed of sheep celebrated for its superlative quality of wool, as Smith in his History of Wool and Woollen Manufactures (Chron. Rusticum, pub. 1641), quotes the prices of English wool in 1341, as follows:

	To the Staple for home Use		For Exportation.	
	Per Sack.	Per Stone.	Pr. Sack.	Pr. Stone.
	£ s. d.	s. d.	£ s. d.	s. d.
Salop.....	6 6 4	5 0	5 6 4	7 3 3
Staffordshire...	5 6 8	4 2	5 6 8	6 5 3
Nottingham....	4 11 4	3 7	7 13 4	5 10 3
York & Rutland	4 10 0	3 5	7 10 0	5 9
Derby.....	3 3 4	2 5	6 3 4	4 8 3
Cumberland....	2 13 4	2 1	5 13 4	2 4 3

In 1792 Prof. Wilson, in his report of the various breeds of sheep in the journal of the R. A. S. E. (vol. 16), writes that when the Bristol wool society in 1792, after much research, had procured as much reliable information as possible regarding the English breeds of sheep, they reported as follows with reference to a certain breed of sheep then existing on the "Morfe common," near Bridgnorth, in Shropshire: "On this large tract of table land there are several thousand sheep kept, during the open months, which produce a very superior quality of wool. They are a native breed, indigenous to the immediate locality, are extremely hardy, with brown or speckled faces, horns, and blocky, thick-set frames, weighing—the wethers from 12 to 14 lbs., and the ewes about 11 lbs. per quarter, and clipping fleeces about 2 lbs. weight. This seems to be the original stock whence sprung the present breed." Again, in 1803, Plymley, when writing on the agriculture of the county, thus describes the breed as it then existed: "There is a breed of sheep on the 'Longmynds' (a range of hills extending from the north to the south of Shropshire on the Welsh or western side), with horns and black faces, which appear to be an indigenous sort. They are nimble, hardy, and weigh nearly 10 lbs. per quarter when fattened. The fleeces on the average will weigh about 2½ lbs." There has also existed for many generations upon the high table-land of Stafford, known as "Canrock Chase," are equally valuable and very similar breed of sheep to the Morfe, but of greater size and scale, and it is without doubt that

from the intermingling of these three original and distinct families, which had many striking characteristics of similarity, has sprung the high-class Shropshire of the present day, with his unique and highly finished type; his exquisite quality and symmetry; his bold, stylish carriage; his wonderful scale and muscle; his hardihood, activity and fecundity; his early maturity and extraordinary adaptability to almost every soil and climate all over the world; each of which attributes trace back to one or other of the three original roots from which he has sprung, viz., Canrock Chase, Morte Common, and Longmynd, so that he can undoubtedly claim originality of breed, the individuality of which, as one of great inherent value, has been abundantly proved.

No attempt at the improvement of the breed appears to have been made until within the last half-century, during the early part of which it appears to have received greater attention from the more extensive agriculturists of the district. Its present development and uniformity of type is entirely the result of improvement by selection from the best of its own species, and most emphatically *not from the introduction of any other breed*. It has been known that several years ago, some breeders had tried an infusion of the Southdown blood, notably in the year 1855, when Mr. W. O. Foster, of Kinver Hill, at the instigation of the late Mr. Samuel Meire, of Harley, Shropshire, gave 120 guineas for the Southdown ram, Young Elegance, at Mr. Jonas Webb's sale at Bahraham, which ram was exhibited at the International French Show, and had been hired in the previous year by the Emperor Napoleon 3d, at the sum of 200 guineas, for the purpose of endeavoring to improve the well known Kinver flock of Shropshires, for which experiment, a special draught of the best ewes was made, but the result was so disastrous, that no less than 40 ram lambs had to be slaughtered, not being considered fit for exhibition at the following annual sale, and nearly all the ewe lambs were also fed off. Experiments in crossing with both the Hampshire and Oxford Down have also been made, but in all cases which have come to my knowledge, with absolute failure and most disastrous results to the flocks practiced upon, the produce having been of such non-descript character as to necessitate their being fed off for the butcher.

For many years the breed was called or known by the name of "gray-faced sheep," and it was not until the year 1848 that they were distinguished by the title of "Shropshires," which name was given to them by my father (Mr. W. G. Preece, of Shrewsbury), who evinced great interest in the breed and assisted the breeders generally in obtaining uniformity of type and developing the inherent perfections of the sheep, which results were effected gradually by means of most careful drafting of the various flocks, the worst ewes being year by year sold off and only the best retained in the flocks, much discrimination and care being also exercised in selecting sires suited to the individual character of the ewes. The very first flocks which were thus taken in hand were those of the late Mr. George Adney, of Harley; Mr. Samuel Meire, of Berrington, and Mr. James Crane, of Shrawardine—all in the county of Salop—which were then considered the three best flocks in the county, but whose ewe drafts, which were sold annually at the local fairs, or at home to dealers, could not realize more than 30s. to 38s. per head, which prices were considered fairly remunerative in those days, but would hardly be deemed satisfactory to the breeders of Shropshires at the present day. These three veteran breeders, at my father's instigation, placed the annual

drafting of their ewes in his hands, with the following extraordinary results: About the year 1850 Mr. James Crane, who had been in the habit of selling his annual draft of 100 ewes at home to the same buyer, at from 36s. to 38s. each, had two claimants for them, and not knowing how to decide the matter, he asked my father's advice, who suggested that the ewes should be submitted for sale by public competition under the hammer, and after looking at the ewes and when discussing their value, he undertook to realize upwards of 50s. per head for them, which in those days was an unheard of price. The result was, that the ewes were announced for sale by auction, and actually realized the sum of £5 15s. 6d. each, this being the first occasion of an auction sale of Shropshire ewes from any recognized flock, which was speedily followed by the annual auction sales of Mr. George Adney, at whose first sale in 1851, rams realized the then sensational price of 29 guineas, and ewes as high as 4 guineas each. Two or three years after this my father established his great annual Shropshire sheep sales at Shrewsbury, at the first of which, in 1855, Mr. Crane's Lord Grey fetched 40 guineas, being purchased by Mr. Ed. Holland, M. P., of Dumbleton, in Worcestershire, and his ewes made up to 7 and 8 guineas each.

Judges and Judging Again.

A CORRESPONDENT TAKES EXCEPTION TO THE VIEWS OF "BREVIS."

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—As you suggested, I will write a few lines in reply to Brevis, although for my own part I had not intended to notice it at all, because I believe that when a man has any grievance that he wants remedied he ought to sign his name at the foot of the same as an evidence of good faith. What is to hinder any man writing what he does not believe for the sake of argument and using any cognomen at the bottom? And though I answer this, I point blank refuse to take notice of it any further except the writer signs his name to his article. Well, to proceed. Brevis is evidently very much afraid of Mr. Dryden, and for my part I don't see any cause why. I have found Mr. Dryden a gentleman in all my dealings with him, and though I differ strongly with Mr. Dryden on some subjects, yet he has always listened with respect to what I had to say and answered the same candidly. Brevis says also that any one with experience in exhibiting knows that the judging is a farce. Well, I have had a little experience in this matter, and I may add that at times I have known what it was to be unmercifully beaten when I had the better stock, and yet what is his remedy? Just exactly the one now in force, and appoint judges in the old way.

Brevis is afraid of the D. S. H. B. Association, and goes on to ask the foolish question if the 500 members of the said association would all have an equal voice in the choice of judges, and why not. I am sure if Brevis attends the meeting and candidly states that certain parties are not capable, and also shows good reason, that body will certainly listen and give due deference to his words, and after this Brevis seems to get mixed, for he says there will be over 100 exhibitors, and then he seems to think that it will be necessary to have 100 judges for these exhibitors. Did you ever read such stuff? Brevis is in favor of one judge. How is he going to better himself? That one judge may be biased in his judgments as well as in the three judge system is apparent, and suppose he was brought 3000 miles, what better would he be if he had purchased his knowledge from Mr. Dryden? I expect Brevis is old enough to know that there are selfish men in this world, and in every class, and such men will be continually working for their own interest, but I have this confidence in any stock associations that are going to compete one with another in the show ring, and it is this, that they will appoint judges that the majority of the meeting believe to be honest, capable men, and I have no sympathy with the idea that because a man is a successful exhibitor, he must be a scoundrel. I think a man may beat the world and yet be an honest man, but some men are so narrow-minded that when a man of more brains and more pluck succeeds in attaining the first place, he must do it by unfair means.

True enough, as I know from experience, exhibitors have tried, and maybe for the time being succeeded, yet I have always found that in the long they have to succumb, and as for drunken judges, they may have been; all I can say is that I never saw any of them, and I yet believe my plan the only way out of the difficulty. How are members of any board to know who are the expert judges in every class of stock in their prize-lists unless the exhibitors inform them? And what is the difference if the exhibitors appoint the judges themselves and then accept the results, knowing who they have appointed? There is one point that I have noticed, and that is that there are more than one class of Shorthorns. Certain men favor one family to the exclusion of the others and vice-versa, and the feeling seems so strong that it seems impossible to please all, and though there may be glaring errors at times, yet they are very often judged fairly, and before closing I may mention one case that took place in Kingston's last show. In the class for aged bulls several interested parties told me that the judgment was entirely wrong, and to satisfy myself I took the trouble of asking a gentleman (who knows Shorthorns thoroughly) his opinion on the awards, and he said he believed the animals were properly judged, and may it not be possible that Brevis is farther wrong than the judges, and if so, he must put up with the results, and my advice to Brevis is to use care and judgment and put his shoulder to the wheel, and he will find no need to bribe or wire pull the judges.

Janesville, Ont.

WM. MCCRAE.

The Hog That Meets the Market's Demands.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR—We thank you for giving us space in which to advocate raising of swine in large numbers.

In our last we promised to give our views as to the sort of hogs that will be most profitable to the farmer and the pork packer. The taste of consumers has completely changed within the last few years. Formerly everyone wanted fat pork, bacon and hams; but now the cry is, "We must have lean meat," and this is the case everywhere.

The old fashioned improved breeds, that is, Suffolk, Essex, Berkshires and some others, have a tendency to lay on fat, while the Yorkshires and Tamworths are longer and carry more bone, consequently have more muscle, or in other words lean flesh. In Ireland, which is the greatest hog producing and bacon curing country in Europe, the bacon curers have induced the farmers to cross the native breed with the improved large Yorkshire. This produces exactly what is wanted, that is, a long, lean pig, light in the head and shoulders, depth of body and good hams.

Denmark, as is well known, owing to the great increase in dairying has largely increased the number of swine fed which are converted into bacon for the London market, and as the price of this commodity depends quite as much upon its being lean, as upon excellence of cure, and as the bacon curers discriminate in buying hogs, paying much less for thick fat ones, scores of Yorkshire boars have been imported into Denmark, Sweden and Germany, where the native hog is very inferior, but the infusion of this new blood has in a very short time produced an animal that fills the bill exactly.

In Wiltshire, England, which county is famous for its bacon curing establishments, the hogs are all received alive and killed at the factories, but paid for dressed weight, the farmers and dealers going there to see them weighed and receive payment.

In the largest of these establishments they have recently offered a *bonus* of 2s. 6d., say 60c., per hog for each carcass where the fat on the back does not exceed about 1½ inches, and this firm have been the means of distributing amongst the farmers and dairymen of that district, boars of the Tamworth breed.

To sum up, our advice is raise long, lean pigs, light at the front end, where the meat is of little value, with good ribs and hams. It is not necessary that the pigs for fattening should be pure-bred, but it is desirable in the highest sense that the sows should be bred to a pure-bred boar. We would further recommend that sows should not be bred till they are at least eight months old, and to any farmer who has a large sow, that gives large litters, we would say keep her and take care of her till she ceases to be of value. She is of greater value, and will make you more money than any ordinary cow you have on your farm.

Now, having got a litter of pigs we would say, any-

thing that is worth doing is worth doing well, hence if it is worth while to breed them, it is worth while to take care of them, that is, give them comfortable quarters, keep them clean, feed the sow well with suitable food and continue the same course with the pigs when weaned; then at from six to eight months old you will have a crop that will bring you a lot of money.

One word more—don't run away with the idea that by lean pigs we mean thin, with sides like inch boards. No, we mean well-fed, thick, fleshy animals.

With your permission we will in your next issue say something more on proper feeding, treatment and marketing.

WILLIAM DAVIES & CO.

Toronto, March 18th, 1889.

A Feeder's Experience.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I take great pleasure in reading the JOURNAL; it is just the paper a farmer and stock-breeder needs. With your permission I will give your readers my experience in cattle-feeding. Two years ago this spring we sold a pair of grade fat steers that I consider paid for feeding. These steers were weighed about a month before they were delivered, and one, aged 3 years and 3 months, weighed 2,120 lbs.; the other, 3 years and 2 months old, weighed 1,850 lbs. When delivered, after being driven twelve miles, these steers averaged a ton each. The heaviest made an average gain of 2½ lbs. per day during the winter feeding, and the other a little less. These steers were not fed over a dozen times by any one other than myself, for I am of the opinion that good results are not easiest attained by having too many hands tending to the same stock. I fed a bushel of turnips each a day, half a bushel night and morning, and 11 to 12 lbs. of meal each day, consisting of 8 lbs. of crushed oats and 4 lbs. of crushed small wheat, fed in two meals night and morning, on cut feed or chaff. Stock feeders have to use their own judgment a good deal as to the amount of meal to feed an animal. Some will stand more than others, but be careful not to over-feed, as this will cause them to bloat and scour, which will throw them back considerable. Keep them gaining right along every day, and also keep them well curried every day, and give them plenty of room to lie down comfortably. The main idea is to get the right quality of cattle, and also the right kind of a man to look after them. Some farmers seem to think that any kind of a cheap hand will do to look after stock. These are the men that are crying out that cattle feeding does not pay. If I wanted to hire a man to look after my stock I would rather give a good herdsman good wages than give a careless hand his board. There are some raw-boned cattle that will not take on beef fast, no matter how you feed them. The sooner you get rid of them the better. If one feeds cattle all winter for the British market they want to have good heavy cattle, for I do not think it pays to feed small ones that length of time. Hoping that others may give us the benefit of their experience, I remain,

YOUNG FARMER.

Shorthorns as Milkers—A Breeder's Testimony.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR—I cannot let pass without a few comments that excellent paper on "The Future of Shorthorns," read by Richard Gibson, Esq., before the D. S. H. B. Association, which is full of well-grounded hope for the breeders of that useful breed of cattle. Permit me to say in conjunction with that paper, that my experience fully bears out the truth of every statement regarding their excellent qualities. I do not think, however, it would be in the interest of the breed for them ever to realize the fabulous prices they did 12 or 14 years ago. We have in our herd five two-year-old heifers (all sired by that well-known bull, Prince Albert) that calved last October and November, which are now, and have been since those dates, giving an average of 28 lbs. of milk daily. Also the eight-year-old cow, Leane 2d, has been giving 9 lbs. of butter per week since last November, and in seven days, when fed extra, two months after calving, gave 9 lbs. and 5 oz. The same cow last fall took first prize at all the local shows where she was exhibited. She has had a calf every year since she was two years old. In the summer her feed was grass alone; milking

nine or ten months every year, and every year, one month before calving, would be a prime butcher's beast, barring being in calf. She is also the dam of three Provincial prize-winners. The heifers above referred to would, if dried up, be in one month ready for the block. I cite these cases to prove the fallacy of the arguments of the breeders of rival breeds, that it is impossible for a breed to be good at the pail and good beefers as well. I do not say it boastfully, for I have no doubt others could give equally good results—perhaps better.

The fact is that on the fertile lands of Western Ontario, there is no use for any other breed than the Shorthorn. I admit that on the more sterile districts in Eastern Ontario, the Ayrshires might be kept with profit, but I doubt very much that even there the Shorthorn would be found more profitable. Therefore we would say to the breeders of this breed that is in possession of so many sterling qualities, don't drop the pedigree of a single female. In a few years they will all be required, especially if the breeding of the purely milking breeds is persisted in; for then not only will the natives require to be graded up, but the grades of the milking breeds as well.

Now I have not written this in antagonism to any other breed. They may, and, no doubt, have their uses, but certainly not in this country, and I believe a great mistake has been made in introducing them here.

Sylvan.

STEPHEN NICHOLSON.

Veterinary.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

Interfering. Brushing. Striking.

BY F. C. GRENSIDE, V. S., GUELPH, ONT.

A good deal of misconception is abroad with regard to the remedying of the interference of one leg with another in a horse's traveling. Many people look upon it as a habit that can be altogether overcome by certain ways of shoeing. That improper shoeing exerts a considerable influence in encouraging striking there is no doubt, but it is not nearly so constant a cause as many think. Certainly it is one of the most annoying of faults in a horse, and it is well worthy of discussion, so that its various causes and means of controlling them may be more generally understood.

Heavy horses seldom give much annoyance from this trouble, on account of being used at a slow pace; but how infrequently colts used at a trotting pace are ever broken in without their inflicting some injury to the skin of their fetlocks; sometimes to such an extent that the skin is permanently hardened, thickened and roughened.

One reason that colts are so much inclined to strike is from the fact that they have not the power of co-ordinating or of regulating the control of their limbs with the same harmony or precision that they get at a more mature age. In other words, they are more awkward, as their muscles do not contract with that facility and accuracy which they acquire by repeated and continued use.

The carelessness with which they use their legs is frequently due to their whole attention being centered upon their mouths, the result of the irritation caused by over-sharpness of the bit, or undue pressure from a bearing-rein. However, some colts of an excitable temperament, are very hard to manage, so that irritation of the mouth is not caused; for their ambition in forging ahead necessitates the exercise of restraint.

The experience of the writer is that the first stage of breaking is more satisfactorily done on the farm than on the road. Steady work at a slow pace usually allays exuberance of spirit, and allows the colts to not only get used to the presence and pressure of bit, but cultivates a moderate sensitiveness which is indispensable to a good mouth. A fair-sized, straight bit, covered with indiarubber, answers very well for a

colt, and is not likely to make the mouth sore, and thus irritate and excite the animal.

In addition to awkwardness being a cause of striking, fatigue is a very important factor; and of course colts are very easily made tired, when compared with matured horses. But even horses, strong and well-developed, will, from excessive work, inflict severe blows upon their fetlock. Horses that would never strike when in good condition, and at ordinary work, become chronic interferers from either low condition or over-driving.

Instead of looking for a specific for "brushing" in some particular way of shoeing, the most important point is to look to the cause and remove it. No possible way of shoeing will stop the striking in a horse out of condition and over-worked. His condition must be improved by rational treatment, and in the majority of cases he will cease to brush.

There is one peculiarity about interfering that cannot in all cases be easily explained—that is, when a horse has struck his leg he will continue to strike it as long as there is any tenderness in it, if he is worked, even though there is no appreciable swelling in the injured part, possibly not more than a slight abrasion. It can sometimes be accounted for by the conformation of the animal, which causes him to travel very close; still he will not absolutely strike with any force, but simply brush, and if there is any scabby condition or roughness, he scrapes it off and leaves the part raw and easily irritated by further brushing. From this manner of going the brushed portion of the fetlock sometimes becomes quite bald, and the opposing hoof shiny, but if attention is given to shoeing and general management, no abrasion or injury is inflicted. Horses sometimes strike without any shoes on, particularly colts, after a soreness has been produced, and will continue to strike unless the part is effectually protected until the soreness disappears.

Nevertheless the mistake is frequently made of shoeing colts unnecessarily soon. They should not be shod until there is a danger of injury to the feet from wear and tear of the hoof, for the application of an appendage weighing often a good many ounces is apt to interfere with the regulation of the movements of the feet. If the hoofs are shortened to their normal length, and kept rounded by the rasp, at the margin, no breaking of any moment will occur, unless the colt is much used on hard roads.

There are frequently noticeable most evident causes for striking, in unduly heavy shoes, shoes too broad in the web, and too long at the heel, causing them to project further out than the hoof, too infrequent shoeing allowing the hoof to become too long and broad, and the gross carelessness of permitting loose and prominent clenches to remain in their dangerous position. The necessity for the removal of such palpable causes of harm is evident, and also the exercise of proper caution in seeing that they should not exist.

Many shoeing-smiths profess to have some secret method of preventing striking, by their particular plan of shoeing; but I for one am no believer in their mysterious plans. In my experience, if a horse is in proper condition nothing can be done beyond keeping him as near to nature as possible, by having the hoofs sufficiently short and narrow, setting level on the ground, no unnecessary weight, and projecting of iron, with perfect smoothness of the inside of the hoofs.

Some recommend the raising of the inside of the shoe in order to throw the fetlock out and keep it out of the way of injury. This plan is objectionable on account of tending to alter the relative positions of

the various parts of the limb, and changing the natural disposition of weight and tension. In addition we have not found it successful in practice. The striking of horses in low condition, or over-worked, or fatigued, or from the awkwardness of colthood, is a trivial matter when compared with interfering, the result of defective formation, or action, the latter causes cannot be removed, all we can do is to combat their effects; and it must be acknowledged that this is often a difficult matter, if not an impossible one, to overcome.

Horses that are narrow in front, or that the fore legs appear to come out of the body close together, sometimes strike in front from traveling close, but if they are well-cared for, carefully shod, and the fetlocks protected for a time, the trouble can be overcome, unless it is complicated, as it frequently is, by the turning out of either one or both toes, or the winding in of a foot in action. This winding in of the foot is especially dangerous as it often brings the heel of the elevated foot in contact with the opposite leg at some part. If the animal's action is low the fetlock is the part usually injured, but if the action chance to be high, the neighborhood of the knee is likely to be banged, producing what is usually termed "speedy-cut."

In the hind legs, a horse with bowed, sickle-shaped or cow hocks, is most liable to strike, but certainly interfering in the hind legs is much less serious, but more common than in the fore. The form of shoeing I have found the least inclined to favor striking, not to say to prevent it, is Charlier's method of shoeing. This plan leaves the foot in as near a state of nature as possible where a shoe is used at all. It simply consists in using a narrow, light shoe, and cutting a groove in the outer margin of the crust so that the shoe is entirely embedded in the lower surface of it, being flush with the outer edge of the sole. The branches of the shoe should only pass back to within about an inch of the heels. This leaves the foot the same size as it is naturally, and there are no projections of any kind.

For developing the growth of good, tough, elastic horn in the frog, and overcoming contracted feet, which are fast causing lameness, I have found nothing to equal this method.

For a horse with high action that speedy cuts, it answers well in most cases, as the animal will not step so high, nor throw his foot with such force as when the weight of the shoe is greater. Interfering boots are an absolute necessity in some cases, and have to be worn, while it is necessary to protect any injury the result of striking, until the part heals or loses its soreness. It is hard to get a satisfactory boot. The essentials of a good one are lightness, softness, or elasticity, and something not affected by damp or mud. There are some recently introduced that appear to meet these requirements, being all india-rubber.

Abnormal Loss of Hair.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Would you please inform me through the columns of your JOURNAL what to do in the following case: I have a two year-old bull. Last October I noticed that the hair was coming off between his legs, and during the early part of the winter it came off all parts of his body. It seemed to dry and fall off. He is apparently in good health; has been stabled all winter. I have tried several remedies to no effect. If not taking too much space, would you kindly answer in your next?

SUBSCRIBER.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH, ONT.

We would recommend an occasional washing with a solution of McDougal's Sheep Dip, on a warm day.

Feed moderately on chopped oats, hay and turnips. Give a tablespoonful three times a day in the chopped oats, of Fowler's Solution of Arsenic.

Protrusion of the Bowels in Pigs.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I had three young pigs about eight weeks old when their bowels came out all within three weeks of each other. They did not thrive well some time before this occurred. They were fed on shorts and refuse from the house, milk, etc. Then after one died I changed their feed to chopped peas and oats, but this had no better effect. Any information on the above subject will be thankfully received.

Lakelet.

WM. H. WEBBER.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH, ONT.

The food must have disagreed with the pigs, causing constipation, from which forcing out of the bowels often results. In case the bowels of pigs become confined, and there is straining, give some raw linseed oil in milk.

The Farm.

THE gains from a farm, if there is any in these depressed times, are usually made up of little. Care, then, must be taken that every department is managed with a due regard to economy. The amount of wages to be paid must be carefully studied. It should neither be excessive nor less than the requirements of the farm. The work should at all times be kept under control. A farmer never loses more rapidly than when he gets behind either in seed-time or harvest. The town or city should be shunned, unless there is sufficient business to justify making a journey there. Not unfrequently we find farmers spending a day in the city, where they have but little to market and are buying but little. There is no one item that will tell more heavily upon the income than the failure to grow sufficient food for the wants of the farm. No stone should be left unturned in the effort to accomplish this. Economy in all details is not at all synonymous with parsimony. A man may be strictly economical in managing every detail of his business and yet liberal in things pertaining to true liberality.

AT an auction sale of farm stock which we attended some time ago, oats were auctioned off at 71 cents per bushel, when in our own city they were selling on the market for 47 cents. Those sold at the auction were a very inferior sample and brought 51 per cent. more than the market price. A group of eager buyers had gathered around the auctioneer and the scramble in bidding was who should get them. We could not but reflect on this exhibition of that too common feature of farm life which consists in allowing the calculating powers to lie dormant at the expense of the muscles. It was to us a very singular course to adopt, paying 51 per cent more than the market price for oats, simply because they were sold at auction. We suspect that the credit had something to do with it, but even so, how much better it would be to borrow money at six per cent. and buy for cash than to pay 51 per cent. for the privilege of buying on credit. The security required in the one case is no more than that required in the other. Allowing the brain to lie dormant is something regarding which farmers should be peculiarly on their guard. The danger is two-fold, though one element of it is but the offspring of the other. The hard bodily labor to which the farmer is subjected inclines him to sluggishness of mind, unless constantly on his guard in reference to this particular, and this induces the habit of mental inertia, which, when once firmly entrenched as habit, is never overcome. The free air of heaven and the out-door exercise, are both

grand elements in the production of brain-power, but we must all be on our guard lest hard labor and mental sluggishness rob us of our heaven-bestowed heritage.

Farmers' Institutes.

MEANS THAT MAY BE USED FOR THEIR ADVANCEMENT.

(Second Paper.)

The people assembled, a magnificent opportunity is afforded for securing members. Persons known to be suitable for the work should be carefully chosen beforehand, whose duty it will be throughout the day to secure members. They should be supplied with printed badges, given out to each member when he pays his twenty-five cents. This prevents the same person being repeatedly canvassed, and as the spirit of badge-wearing is sure to become infectious it aids in the securing of members. The membership of any Institute may in this way be doubled in one day. It is a great matter to secure a large membership. Institutes without members are like governments without subjects—a skeleton framework that repels rather than attracts: a sepulchral body without a living soul. A member of an Institute is much more likely to attend the meetings than one who is not a member, hence the importance of securing a large membership.

The officers who manage the Institute should be selected with great care, neither politics nor creed, social position nor wealth should weigh in the selection of the officers of the Institute. *Fitness* alone should be the standard by which these men should be measured and the choice made, determined with a due regard to locality in the appointment of the directors. The chairman should be measurably free of speech, a tolerable tactician and a man of good level judgment. He should possess sufficient dignity and firmness to rule in time of storm and calm the troubled waters, and possess that happy faculty of making every person who attends feel that he is welcome and that he himself is an essential part of the meeting. He should be able at any time to turn the Quaker quietness that often follows the reading of a paper into the garrulousness of a Chinamen's assembly. Should know when he has said enough himself and when he has not said enough, and should be sufficiently interested to attend all the meetings if possible himself. The vice-president should be a fac-simile of the president, for his duties when officiating are the same. The secretary should be a man brimful of enthusiasm and fully conscious that he has a great work in hand. He should be most painstaking in keeping the records and untiring in his efforts to give due publicity to the meetings. The directors, one or two representing each township, should be representative men, not figure-heads who simply wear the badge of office. When the meetings are held in the townships which they represent they should be unwearied in their efforts to make these successful, and all this without the hope of emolument, for the success of the good work in which the officers participate is in itself an ample reward.

A good attendance at the meetings is a great matter, viewed either in the light of economy or utility. Five hundred persons at an Institute meeting may as easily be instructed as fifty. With a suitable programme the gain in securing the former attendance rather than the latter is just tenfold. The types once set a fifty thousand edition may as readily be struck off as a five thousand one. It is very discouraging to find well attended meetings followed by those thinly attended. Where this arises something probably has been done amiss or left undone at the last meeting

that should have been done, or some error in the arrangements for the slimly attended meeting has crept in, barring such casualties as weather and other things that are beyond control, for as the Gauls when they invaded Italy and tasted of the wines thereof wanted more, so the farmer when he is given one good feast is likely to come back for another.

It seems not a little strange that farmers should show any indifference as to the success of meetings intended expressly for their benefit, but in this we see nothing more than an outcrop of human nature. The world over mankind are indifferent to their highest interests, and to remove this indifference is the life-work of the noblest army on the earth; and it succeeds not simply by spreading the feast before the multitude but by going out, as it were, gathering them up and compelling them to come in. True, men are less indifferent to material things, but this indifference manifests itself in various ways. The boy refuses to gain that knowledge in early life which will help him on to success, and there is much of the foolishness of boyhood clinging to most of us to the end. That farmers should play shy of attending meetings that are wholly new to them is not so strange after all, and following in the wake of the missionary, by using every device that is lawful and reasonable to persuade them to attend, we should try and bring them in. The most effective means to secure this attendance is the loyalty of those who are members. A church with fifty members whose hearts are aflame with love to mankind, will transform a neighborhood more quickly from the wilderness to the garden condition than one with five hundred wearing the garments of a formalistic faith. An invitation from the secretary by printed postal card and intimations by small posters circulated through the schools, will accomplish much, and in certain localities intimations through the press.

But it is said that some remain aloof who look upon the Institutes as a political engine to strengthen the party who are at present in power, and we are obliged, reluctantly, to believe it true. So far as our own observation goes, and it concurs with the testimony of others, a large majority of those who attend the Institutes belong to one political party. Now, to say that the Institutes have no connection with the Government is not correct. They are the creation of the Government; but who will be so unfair as to say that they were not called into being for the advancement of the farmers' interests rather than to strengthen the Government? It is a conclusion supremely foolish to refuse to participate in the advantages of any public benefit because it happens to be popular with the people and so may indirectly tend to strengthen the Government. On this principle the farmers of the North-West, not in sympathy with the Government, might as well refuse to sow the Russian wheat brought in through the Experimental Farm at Ottawa, or to grow the hardy fruits tested at that admirably conducted institution. If Farmers' Institutes prove a means of lifting up the farmer, those who refuse to attend them will not be lifted up, and they will have no reason to complain if their neighbors beat them in the race. We can have every patience with those who refuse to attend the Institutes through indifference, but none whatever with those who refuse to attend them for political reasons. While the advantages that flow from party government are very great, it is a matter of inexpressible regret that because of this men will deprive themselves and their families of a knowledge in reference to their calling, the influence of which can only be helpful.

Essay on Field Roots—their Comparative Value as Cattle Food, Cultivation, etc., etc.

BY D. NICOL, CATARAQUI, ONT.

To which was awarded First Prize by the Ontario Agricultural and Arts Association, 1888.

(Concluded.)

Of Soils.—The soils best suited for the cultivation of the turnip are unquestionably those of a free-working loamy character, in which the most suitable conditions, chemical as well as mechanical, for the growth of the plant are to be met with. In the lightest description of soils, those proceeding from silicious beds of the several sandstone formations, the mechanical conditions, so far as the particles is concerned, is to be met with to the greatest extent; and in the heaviest descriptions of soils, those proceeding from the clay beds of the argillaceous formations, the chemical conditions exist in the most favorable proportions. Between those two extremes we have a wide range of soils, possessing in necessarily varying proportions the two desired conditions. To assign to these their proper relative values in the cultivation of the crops would be impossible without a knowledge of the climatical conditions of the district in which it was to be carried on; as in a locality where the rainfall is great or humidity of the air constant, the mechanical texture of the soil would be of higher relative importance than its chemical constituents, whereas, in naturally dry districts, a far larger proportion of clay would, from its powers of absorbing and retaining moisture, improve the texture and capabilities of the turnip soils.

There is no doubt that, within the last few years, the range of turnip soils has been greatly increased in this country by the aid of thorough draining and the mechanical contrivances which our skilful and enterprising agricultural engineers and implement-makers have placed at our command. These soils, however, possessing in themselves the natural suitabilities of the crop are always the most free from disturbing effects of weather, etc., economical to work and most suitable in their returns. The essentials of a turnip soil are that it be deep, free from stagnant water, susceptible of minute division, and sufficiently tenacious to absorb and retain moisture sufficient for the wants of the plant, and that its general composition be such as to contain the mineral constituents necessary, for its growth.

The plant being a quick grower is, of necessity a rank feeder; therefore, the first essential is depth of soil. In some cases this is limited by natural causes in many, however, it can be materially increased by under-draining and judicious sub-soiling. It is necessary that the soil should be deep enough to allow the branching rootlets full range in search of food; that it should be in mellow condition, so as to present the largest possible amount of surface to the fertilizing action of the air and moisture always in contact with it, and thus add at once to the feeding surface and food materials of the plant.

The difference that we so frequently see in the turnip crops in the same districts, where the same climatic influences and insect visitations occur, are generally attributable to the more or less perfect observances of these necessary conditions. They are simple in themselves, involving no great difficulties in their comprehension or execution. If it is good policy to grow turnips at all, it is surely the best policy to take every advantage of circumstances which will enable us to do so with the greatest chances of success, and thus produce the largest and most remunerative returns.

For the best system of rotation the turnip crop is placed between two straw crops. It is essentially a fallowing and manuring crop, its thorough cultivation being an effectual method of checking weed growth and keeping land clean. Its requirements from the soil differ materially from those of the straw crops, while from the nature and habits of the crop itself, it abstracts from the atmosphere a large amount of those nitrogenized substances which we have reason to believe are so beneficially applied to the growth of the succeeding cereal plants.

The principles that should govern the application of manures are still very imperfectly understood by us, and until agricultural education is more advanced, and the farmer is better acquainted with the nature of the plants he cultivates, and of the soils and atmosphere in which they grow, there will always be diffi-

culties in the way of establishing anything like general intelligible rules for our guidance. Chemistry, however, has done this much which we can practically apply with advantage: it has made us acquainted with the nature and amount of ingredients which our different growing crops abstract from the soil, and we may, therefore, fairly infer that, if these are again returned to the soil in the shape of manures, we shall at all events sustain its normal degree of fertility. This probably, for the present, is the safest and simplest guide we can take in deciding upon the description and quantity of manure we should apply to our fields. The calculations are easily made by those who prefer accurate figures to guess work in their estimates, and if the quantities given to the land are in excess of the quantities abstracted from it the land will certainly be kept in good condition. Of all mineral substances abstracted from the land by growing crops, potash and phosphoric acid are the most important, while in most soils they are met with in but very small proportions. Looking at the analysis of the turnip, we see that the proportion of potash it abstracts from the soil is about three times that of phosphoric acid; therefore, in the use of all artificial manures, we should endeavor to secure due proportions of these ingredients. It is now generally known that farm-yard manure contains within itself all the substances which plants require as food, and in about the right proportions. Not only does good, well-cared-for farm-yard manure contain all the inorganic (mineral) substances the crop requires, but also the organic substances which are equally essential to its growth, but which usually, to a great extent, obtain from the atmosphere.

When a turnip crop succeeds a grain crop, it is important that preparation be commenced immediately after the field is cleared of grain by inducing as far as possible the germination of weed seeds in the fall.

The gang-plough is well suited for this purpose, covering the seeds sufficiently to induce them to start as soon as they absorb moisture; then, just as soon as the seeds have started, a going over with the harrow puts an end to that crop, and brings to the surface most of the roots of the perennial weeds which, by a few days' exposure to the hot, drying sun, are ready to be ploughed under again. This is the proper time for the fall application of whatever farm-yard manure may be available for the purpose. It should be spread evenly and finely pulverized with the harrow before being ploughed in for the winter. Manure ploughed under in the fall becomes more thoroughly incorporated with the soil, thus making a more congenial seed bed in spring than fresh manure applied just before sowing time. In order to secure as fine a tilth as possible, it is always advisable to cross-plough the land in spring, and this should be done before drilling for the seed, as it gives another chance for weed seeds to start and be destroyed by the harrowing before the drills are made. When bone dust or any other kind of artificial manure is to be applied, it should be sown broadcast on the land just at this time, as in making the drills it is mixed with the soil.

The distance of drills apart should be thirty inches, although some think less sufficient, but in the Lothians and other well-farmed districts in Britain drills are generally made thirty inches apart, so as to allow ample room for the growth of the plants, and for the use of the horse-hoe in keeping the ground clean.

One great secret of success in growing turnips is to sow only when the ground is in moist condition, and just immediately after the drills are formed, so that the seed springs and gets somewhat advanced before the skipping-beetle (black fly) can come on in strong force; or, otherwise, if the seed is sown in dry soil it will not germinate until there comes a shower of rain, which may be many days thereafter, and by that time the enemy has gained the vantage ground, so that not a plant is allowed to appear above ground. Hence it is always better to wait a few days until the necessary conditions can be secured. The best time for sowing the Swede here is from the 1st to the 25th June. Many seem to think that by deferring until later they are more likely to escape the ravages of the destructive insect, but not one-half so much depends on that as on taking advantage of his position.

"We think the last number the best issued and hope the farmers and breeders of Canada appreciate your efforts to give them one of the best journals in their interests on the continent."—Sharman & Sharman, Souris, Man.

feeding of calves, similar to one used by Mr. E. D. Smith, of Churchville, president of the Holstein Association. The side of the pen facing the passage is divided off into stalls, 2 x 2 ft., A, and allowed to project one foot in the passage to prevent the calves from bothering one another, sucking each other's ears, etc. B is a small box of such a size as to permit of a pail being held firmly in it. Through the wall a heart-shaped hole is cut, to admit of the calf getting its head through nicely, but not its feet. To the side of the wall close to the box, a small chain and snap is fastened so that as soon as the calf puts its head through to drink, this chain is snapped on to a small neck strap that is always on them. They are thus prevented from troubling the other calves while feeding, and are so held until all are through.

After the milk has been fed, they are given a small quantity of fine chopped oats, etc., in the boxes. This serves not only for the purpose of nutrition, but also to divert their minds from the milk, the consequence being that they never suck each other when let loose. Mr. Smith claims that he has had no trouble whatever in learning them to walk up to the stalls and drink, and now when they hear the pails being set in the boxes, they advance at once to their stalls.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

Ensilage.

BY PROF. J. W. ROBERTSON, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

No single subject connected with agriculture is today creating so much discussion or receiving so much thoughtful attention from the farmers of Ontario as that of ensilage. And it deserves more attention than has yet been given to it. A prejudice still exists in the minds of a few farmers against the construction and use of silos. That feeling, which can hardly be dignified by being called a judgment, had its origin in the partial failures of some of the first efforts to introduce that system of preserving fodders into this country. But as the causes of such failures, or the only partial successes in the application of the true theory of curing fodders in a silo, have been discovered, and can be always guarded against, remedied or removed, satisfactory results may now be relied upon with certainty. In the handling of any perishable article, hap-hazard treatment will give hap-hazard results.

Occasionally no loss may be sustained, but generally the damage and loss will be proportionate to the absence of applied knowledge and skill. A clear knowledge of "how to do it" with ability, to do it just that way, will enable farmers as well as other men to successfully cope with the things most difficult to do well. The simplest and easiest jobs need similar mental equipment in the man who undertakes them. The curing of a crop of fodder corn in a silo is, now an easy and certainly satisfactory task to the farmer who will follow directions with reasonable prudence.

Let me make clear the use of these new names. A silo is simply an air-tight building, box, tank, compartment, trench or pit into which fodders in a succulent state are put for preservation and curing. Silage, or as it is sometimes written, ensilage, is the feeding substance after it has been so preserved and cured. Hence there are corn silage, clover silage, oats and peas silage, etc. It used to be stated that there was a loss in the feeding value of fodders when taken from a silo. When the silage was partially rotten of course that was the case, but the same condition of quality and consequent loss in feeding value would result if hay, grain or straw were allowed to become rotten in the mows or ganary. The rotting was and always is

consequent upon unsuitable conditions, which the silo is intended to guard against and remove. Then came the period when scientific men and others loudly and vehemently advertised the presumption of those who said they found the feeding value of the fodder increased by the heating in the silo. However, the cows were and are of that opinion still, and in estimating the feeding value of a fodder, the verdict of the animal that consumes it is always worth more than the opinion of a chemist. "Oh but," rejoined the chemist, "you cannot take anything out of a silo you did not put into it." But the fact contradicts their assertion. Would a dairyman pay any heed to a "book scientist" (?) who told him with scholarly dignity and unbecoming contempt for facts, that he could not take anything out of his cheese-curing room that he did not put into it? He knows he puts in green uncured cheese, almost wholly indigestible, and that he takes out cured cheese almost wholly digestible. In the same way, to some extent, cured silage has a higher feeding value than the fodder direct from the field.

The manner of growing the crop has very important influence on the possibility of its advantageous curing. A fodder corn crop must be grown to near maturity. Thereby the several plants will contain the largest amount of nourishment, and will also be capable of long preservation without loss. The feeding value per acre is also highest when the crop grown is almost mature when cut. The conditions requisite for securing that degree of growth in the corn plants in our Province are (1) early planting, (2) thin seeding, and (3) frequent cultivation.

1. The land for a corn crop should be drained, either naturally or by artificial underdrainage. It should be worked into a fine seed-bed. To attain that, I recommend deep fall ploughing, and only surface cultivation in the spring. Early planting should be shallow, that the sun may warm the seed-bed and seed, and so prevent rotting. A liberal quantity of barn-yard manure, worked into the soil, will be profitably applied. Phosphate fertilizers are also valuable.

(2) The crop should be grown in rows. If the land be very weedy it can be cleaned more economically by planting in hills. Three seeds to the hill, three feet apart both ways, will be enough. The rows should be from 3 feet to 3 ft. 6 in. apart. The seed should be put in not thicker than one grain every six inches in each row. A common force-feed seed drill may be used, all the spouts except two or three being stopped up. Level cultivation is preferable to "hilling up" or "moulding up."

(3) As soon as the corn appears two inches above ground it should be harrowed over with light harrows. That treatment will keep down any growth of grass and destroy the tender weeds. The harrowing should be repeated twice before the corn is six inches high. Frequent cultivation between the rows or hills afterwards will keep down weeds and promote growth. The cultivation should be continued, but after the corn grows to be two feet high it should be shallower. That may be kept up until the stalks are higher than the man and the horse. When the lower leaves begin to turn yellow and the ears of corn are in the milky stage, and quite fit for boiling for table use, the crop should be cut. In another article I will furnish a description and illustration of the most economical carrying convenience for carrying the crop to the silo. I also propose to prepare plans and drawings to aid your readers in a clear conception of the best way of constructing a silo.

It is possible to cure silage to advantage and in such a way that it may be preserved indefinitely,

mainly because the cells of plants continue to live after the stalks are severed from the roots. It is the function of plants while growing to deoxidize carbon and accumulate the energy of the sun for the future service of lower animals and man. It is the function of animals to oxidize and so expend the energy previously stored in the plants, and which they have appropriated in the form of food. The cells of plants in the stalks, leaves and grain, after these parts are separated from the root or whole plant which bore them, simulate the action of living animals so far that they begin to absorb oxygen and evolve carbonic acid. In this manner is heat generated. And if these cells be robust from sufficient maturity, the temperature will be considerably increased. Robust cells from plants almost mature are also much less liable to become the prey of minute bacteria. They are able to resist their attacks. If confined in bulk in the presence of ordinary atmospheric air, they will raise the temperature to a point between 125° and 150° Fah. When the temperature is maintained anywhere between these points for some days the life of the cells is destroyed, as are also the spores of mould, etc., which will have been deposited from the air on the plants or parts of the plants. These spores are practically everywhere disseminated. Hence in filling a silo the observation of a few simple requirements are indispensable to success.

1st. It is essential that the silo be air-tight and frost-proof.

2nd. The crop to be ensiled must be grown to a stage when the several plants will be almost mature.

3rd. The crop to be ensiled should be put in loosely at first, to permit of quick and sufficient heating. Only the sides and corners should be tramped.

4th. The filling may proceed every day, every second day, or every third day, with equally satisfactory results.

5th. The silage may be covered with cut straw to a depth of two feet. Or it may be left uncovered altogether at the expense of wasting only the top six inches.

In the following formula I have tried to put the whole theory. By life I mean life as in the cells, or life in the spores, which would be destroyed by a temperature above 125° Fah. If air finds admission through a knot-hole or crack, or down the side of a silo from lack of tramping that part, and corners, it will carry spores with it and so introduce new life.

SILLO CONDITIONS.

RESULT.

Life in the cells of the plants.	} Oxidation generating heat.
(a) In the presence of air.	
Life in spores.	} Mould.
(b) In the presence of air.	
Life in cells.	} Fermentation.
(c) No air.	
No life in plant cells or spores.	} Preservation.
(d) No air.	

Poultry.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

Spring Work in the Poultry Yards.

BY W. C. T. PETER, ANGUS, ONT.

The spring season, so soon to be upon us, will cause a general interest in the watching and caring for chicks. The busy farmer's wife can barely spare the time to look after a few setters and their flocks well enough to get the best return for time and trouble expended. I often used to wonder that our farmers' wives cared so little (seemingly) for domestic poultry, as in contrast to women in similar positions in England. But observation has taught me that

it is indeed only a *seeming* indifference. I find their duties so much more arduous and extensive that but for the necessity of having eggs to bake with and furnish the table in summer, few can take upon their already over-burdened shoulders the additional labor of keeping a large flock of fowls. To my mind farmers are sadly out of pocket in not adding a substantial flock of well-bred stock in either ducks, hens, geese or turkeys, to swell their profits every year. My experience is that hens and ducks pay by far the best, as a general rule, and the reason is this: ducks lay well, their eggs hatch a good percentage, and young ducks fed all they will eat, for market stock, are ready for killing at from eight to ten weeks' old. It is folly to keep them longer, for if well forced forward they will be in prime condition at ten weeks' old, and are in the market at a season when they will command extra high prices. In favor of hens we say, they lay more eggs, and pullets lay earlier than young ducks, and if the large breeds are kept, they will market at eight months old, from eight to ten pounds, according to variety. As my idea just now is to lighten the labor of those who have the care of the poultry on the farm, I will mention as first in order setting hens. A great deal of time can be saved by having a place set apart for them, so that if you have a dozen or so of sitters you can put them in one room or small shed, where all can be attended to at the one expense of time and trouble; their nests should be made to shut them in, so that they cannot then get off at unreasonable times, or stop off the nest so long that the eggs will get chilled. By setting two or three hens at one time all the chicks can be given to two, or if poor hatching, to one hen; this not only saves time, but money, for the hen eats most of the dainties that are in some cases saved and given to her for the chicken's benefit. To make the nests, take a box, or make one about twenty inches square, leaving the front open; across the bottom of the front nail a strip about four inches wide; this is to hold in the nest material, or else the hen in getting in and out will spread it so that the eggs will roll out. Make a door of lath strips to finish the front, and nail it by leather strips to the side of the box; fasten the door with a hook and ring, or a button. Any boy of ten can make these nests, and by storing them away after using, they will answer for several years. Nests such as these could be put in a woodshed, or any small place near at hand to be convenient for those attending them. Put dry sand in the bottom of the nest, at this season, and short straw in plenty, to make a good snug nest, well filled in at the corners, and nicely hollowed in the centre; but if the nest is not shaped and the corners not filled, they will roll out, and into the empty corners; and you will be surprised to find two or three quite cold some morning through this cause. And did you ever notice that it is always the eggs you prize that come to grief; or they were so nearly hatched that a few more hours would have given you living chicks? I think the art of doing mean things, in the saintliest manner, is the hen's greatest natural forte; they can make you bubble and boil with rage; they can make you say words you thought you never knew till then, and look like a picture of calm content and ineffable sweetness all the time. Well, to return to business. In setting the hens I give them nest eggs for a couple of days till they get used to their quarters, and to being let off for their feed. Let them off every day as near as possible at the same hour. If they will not get off, lift them off, and shut the door until you wish them to go back. If you cannot remember the hens that occupy each nest, tie or sew a piece of cloth to the leg of each hen, and tack a piece like it to the

nest she occupies, and when she is ready to return open her door, and nine times out of ten she will go to her own nest. Feed setting hens on whole grain and give clean water. If you have a sand floor to the house she will take a dust bath; if not, provide one or two boxes of sand for the biddies; they will often prefer a bath to their food. Now you see by this plan, while the hens are off feeding you can examine the nests, for some will be near hatching, some may have a broken egg that needs removing, etc. Always shut the doors so that the hens cannot go on to each other's nests. All this is so very simple to perform, it is a pity it seems so much on paper. Any one can attend to forty sitting hens, look at every nest and have the birds closed in again in half an hour, whereas a trip to the stables for one hen, up in the hay mow for another, and in odd corners every where for the rest, entails a lot of trouble, and Biddy is almost sure to treat her nest in an inaccessible place, so you cannot see if anything goes wrong with her. Hundreds of chicks die unsuspected of having been hatched, for want of proper food, small grain, etc., which they cannot procure for themselves, and their owners not knowing of their existence, cannot provide; and in most cases it is the early flocks that are lost, for as spring advances Biddy will make her nest out of doors almost every time, or on the floor at any rate, nature teaching her that it is the coolest place.

Let me say in conclusion, that one early chick is better than two late ones. Be kind to your stock and gentle in your manners. There is enough of the aristocrat about Biddy to appreciate these attributes of gentility. Never give a sitting hen a chaff nest, it will stick to the moist stuff of the newly hatched chicks and fairly glue them up.

Raising Young Turkeys.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I have great difficulty in raising young turkeys. There is no trouble in hatching them, but I cannot raise them, as they all die before six weeks old. They seem strong enough for about two weeks, then they will drop their wings and die. By giving me any hints on food and management that this may be overcome you will greatly oblige

MRS. W. M'C.

ANSWER BY W. C. G. PETER, ANGUS, ONT.

As I have no symptoms to guide me, will say it may be lice, or the young flock may be confined too much to one place, or on the reverse side allowed to have too free run and get out while the dew is on the grass, which is almost surely fatal at the age you mention. The birds may be inbred, and in that case are inherently weak; or your soil may be damp and clayey, and if so you may as well give up trying to raise turkeys. They can not succeed and pay well on a damp, cold, clay soil. Here where the soil is light and sandy, turkeys thrive with little care. I am often surprised to see them grow and do so well, in some cases almost entirely neglected. As far as my experience goes in giving advice as to management, I would say, dust the turkey or hen before you set them with Persian insect powder. This will keep the mothers from getting loaded with vermin while they are sitting, as the feverish state of their bodies while brooding generates lice in awful numbers sometimes, and these are deposited on the young poults as soon as they are hatched, and then begins the work of destruction. Just before the eggs are to hatch, dust the mother again very gently while on the nest all along the back, and if all the mites are not gone from her, they will take their departure directly. This ounce of prevention will save much trouble and many poults. When all are hatched next morning lift off the mother gently to a new place, and for the first six weeks or so the coop should be moved daily, so the birds have clean ground to prevent disease getting a hold; but if kept in a coop and not often moved they will surely droop and die off in large numbers. It is well not to let them out of a coop till between two and three

weeks old, as the mother will stray too far and the poults get almost exhausted, and some will be lost. Always keep them in till the dew is off the grass, till the red head is well shot. This will be, under favorable circumstances, when they are about eight to nine weeks old. After that your young birds are very hardy. Feed the young the first week five or six times a day, not too much at a time—hard boiled eggs chopped fine and mixed up crumbly with bread crumbs or oatmeal; boiled rice, curds, a little cooked chopped meat, bread and milk. Millet seed, canary seed and the large oatmeal grits, an onion cut fine, are all good for the first two weeks, also a meal occasionally of scalded mixed bran, shorts and cornmeal—not much of the latter. When the red is shooting put a little cayenne in the mixed food now and then. Always scald the soft feed. Rice boiled in milk will prevent diarrhoea, that is so apt to attack them then, and it is better to prevent it than to doctor them after they are attacked. I have said so much on this question because it will interest many readers besides your correspondent. If the birds are inbred, to purchase a male bird at once is the best remedy.

Trouble with Hens.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

I wish to know, if possible, the disease which affects hens as follows: They throw their heads up, stagger, look straight up, and some even turn their heads backward until they tumble over.

If you will kindly answer through the columns of your valuable paper, stating some effectual remedy, you will greatly oblige, yours truly,

SUBSCRIBER.

ANSWER BY W. C. G. PETER, ANGUS, ONT.

You say your hens stagger, turn their heads backwards, and tumble over. Look for lice. But I think more likely they are over fed. You can tell by examining the under part of body at the back called the apron, in England. If too fat, separate the fat ones from the rest, and feed largely of bran and oats, no corn, and very little wheat, and make them scratch. Fasting for a day will do them good—no feed nor water. If inbred, it is epilepsy, which affects the brain; or indigestion will cause a similar condition. Indigestion is largely caused by too much sameness of food, and inactivity while in winter quarters. Give all the fowls "Douglas' Mixture" in the drinking water, a gill to a ten-quart pail. It is made as follows: Take 8 oz. of sulphate of iron (copperas) and ½ fluid oz. of sulphuric acid, put in an earthen vessel one gallon of water, into which put the sulphate of iron. When thoroughly dissolved, add the acid, stir, let settle, and bottle off, and it is ready for use. You can use it three times per week.

The Apiary.

Spring Feeding.

BY R. F. HOLTERMANN, BRANTFORD, ONT.

After such a season as the past there is no doubt that shortage of stores will be all too frequent. After bees have past through the winter to what extent the absence of abundance of feed effect brood rearing is a disputed question, and one which might well receive some careful investigation. Of course there should be enough honey or stores in the hive to provide the old bees with all they require for themselves. Next it is highly probable when the bees see there is a likelihood of shortage in this direction they will not allow as much brood to be reared as if such shortage would not be probable, therefore plenty of stores should be given.

HOW TO FEED.

This is a question difficult to answer. Solid food, and all at one time if possible, is perhaps the safest, the theoretic objection being the liquid feed, and that frequently will excite the bees, making them imagine a honey flow exists, and after having stored all in the combs they next rush out of the hive on the lookout for more. This, especially with cold winds, will occasion heavy losses. The excitement wears the al-

ready none too vigorous bees out, and the additional brood reared through this stimulus will not compensate for the loss. Solid food, placed, say above the combs, cannot so excite the bees; they can only get a little at a time, and the food actually keeps the bees at work in the hive when they might otherwise be flying out.

When bees can fly out it is not necessary to feed them the best of granulated honey; maple syrup and coarser or perhaps more properly less impure sweets, will do, as the bees can have frequent discharges.

COMB OR EXTRACTED HONEY.

Many having a few colonies of bees will wonder what kind of honey they had better take, comb or extracted. This is a difficult question to answer. The locality, the season, the man, and the time he has at his disposal all influence the problem. If the locality is such that honey flows are gradual, extracted honey would be better to take, as slow filling of sections gives an inferior honey. If the bulk of the honey taken be dark, comb honey would be better to take, for dark grades of honey are more salable in comb than in the extracted form. If you are far from railways and the product will have to be shipped long distances by rail and waggon, extracted honey would be better to take.

THE SEASON.

There are many poor or inferior seasons for honey when no comb honey could be secured for market, and yet extracted honey may be secured in small quantities. This is a strong argument in favor of taking extracted honey.

Now as to the influence the bee-keeper and the time he has at his disposal has: It requires a man of experience to make a success of taking comb honey. He must understand how to keep his colonies strong yet not have them swarm; he must understand his locality, knowing when generally the honey flows commence and their duration; he must have time to watch his bees more closely, as they have to be kept so near the swarming impulse. All things considered, for the average farmer it pays better to take extracted honey.

IMPLEMENTS.

The bee-keeper should have all the necessary implements for his operations. The smoker should be in good condition and in first-class working order, so as not to fail him for any critical operation. Old pieces of rag set on fire, and the smoke from them blown upon the bees with one's breath, is often only another method of exciting the bees to anger. When a good smoker has been secured, it should be placed in a sheltered place where moisture will not injure it, either destroying it, or at least preventing it from remaining in first-class order for any length of time. Care should also be taken that any fuel remaining in the harrel will not set fire to surrounding material. A box with a tight cover, in the open yard away from buildings, is a convenient and safe place to keep a smoker.

Honey extractors: there are many designs, and those sold by reliable dealers all have their merits. With them care should be taken to have them perfectly clean for the honey season, and dry at all times of the year. The method of allowing honey in large quantities or drippings to remain in them is a bad one and must end in the injury of the honey and the extractor.

WINTER REPOSITORIES.

A great many farmers keep bees in places that are very detrimental to successful wintering. The main reason is ignorance of what really is the best place

and the conditions required for successful wintering. It will be well before long to give this subject some attention, so that every one can select or construct cheaply such a place for next winter as may be better or best suited for bees. Much winter loss can perhaps be avoided in this way. Just to mention one instance, the room in a house is generally a place worse than outside for bees, yet how often do we hear the remark, "I lost my bees and I do not know why; they were placed in a room in the house and given the best of care," and it is all blamed on "bad luck."

In the January number of the *LIVE STOCK JOURNAL*, reference was made to an experiment in wintering bees by J. E. Pond. It was G. W. Demaree who conducted the experiment.

GET READY FOR THE HARVEST.

The *Indiana Farmer* makes these very sensible remarks about getting ready now for the coming honey harvest:

"Who of our farmer readers do not dislike to take the time in spring and summer, when every moment is so valuable, to put sections together, paint and repair hives, etc.? All this is work that certainly should be done now, during the cold and stormy weather. Think, too, what a pleasure it will be to feel that all is in readiness for swarms, let them come as early as they will. A golden motto for any bee-keeper is, have everything ready early, and get all in readiness when it can be done with the least outlay of valuable time."

Horticultural.

Though the time to prune apple trees varies with conditions, yet the trend of opinion is that early spring is the best season for such work. At this time the wounds heal quickly and prevent rotting. Some have given the time to be when your knife is sharp, but this will only apply to small limbs, and not to the medium sized ones. Timely work in cutting off the small limbs is what is called for, thereby getting rid of the danger of death to the tree, and lessening the chances of checking its growth. Judicious pruning not only improves the beauty of the tree, but it also strengthens their vitality, and increases their fruitfulness. By pruning, the flow of sap is checked, thereby permitting of its better assimilation. Better fruit also follows. The result of letting the sun and the air in is that a better colored, and better ripened fruit is gathered. All dead limbs should be removed; in erlocking ones separated and the whole tree balanced. Common paint is a good thing to apply to wounds left by the removal of large limbs.

Fungi Injurious to Farm Plants.

(Third Paper.)

RUST (*Puccinia graminis*.)

This is one of the most subtle and most harrassing enemies in the vast army of low organisms that battle with other plants under the farmer's care for the possession of their life's fortress; and though they never succeed in gaining supreme power, yet sap them of their vitality and lessen materially the returns to the granary, both in quantity and quality.

It has been held by some few persons that wheat rust was due to mere atmospheric influences, such as dampness, causing the straw to split, and then the action of the air on the iron in the juices of the plant producing the alternate red and black coloring which they called, with some show of reasoning, the red and black oxides. Thorough research and elaborate experiment with the aid of the microscope, has placed it beyond question that rust is to be classed with the long list of injurious fungi so detrimental to the growth of crops.

Though there are many dissenters from the orthodox theory of DeBary, yet owing to the want of proof and experiments to give validity to their statements, we find the leading authorities on the question, with the exclusion of perhaps one or two, accepting the extended researches of DeBary as conclusive proof that the barberry is one of the culprits in fostering this pest. These dissenters, though they may have little doubt that the barberry is not a host for this parasite, and though they endeavor to pick holes in DeBary's researches, are yet wanting greatly in the true Darwinian method of procedure—they do not bring forward any reliable experiments nor researches to give substance to their theorizing.

It cannot be asserted dogmatically that the barberry is the sole cause of rust, but it may be asserted truthfully, backed by DeBary's extensive experiments, and common observation, that it is one of the nurturers of this pest. In England they have found that the mahonia also serves the purpose. There is no more doubt about the assertion that the barberry plays a part in the life history of this fungus than there is in that of saying that there are others as well, yet undiscovered that serve the same purpose. On the island of Australia there is not a barberry plant to be found, yet they are annually troubled with rust. Some account for this, with a certain amount of plausibility, that the spores are so light and produced in such great numbers that they could easily be carried by the wind thousands of miles, but the most likely view is that there are other plants that are capable of performing this function as well as the barberry, but so far they have escaped discovery.

If during the early spring months, say the latter part of May or early part of June, the leaves of the barberry are examined, small yellow patches will invariably be found on the underside of the leaf. Figure 1 is a cross section of one of these affected leaves, through the yellow patches, which was obtained by the writer after many efforts in this direction, and which has been carefully and truthfully engraved by our artist from a drawing made by the writer while viewing the section through a microscope with lens that magnified sixty-five times. This section was made from the leaf of the ordinary barberry on the 2nd of June. The small circular cases noticeable at the bottom of the cut, which represent the underside of the leaf, contains the small spores that are instrumental in introducing the rust on the grain-stalk in early summer.

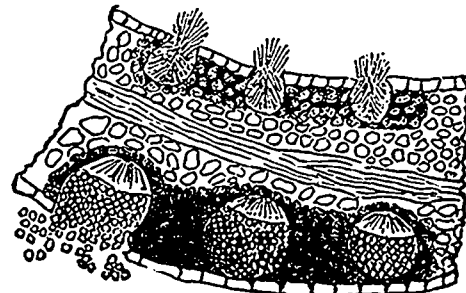


Fig. 1.

Cross section of an affected barberry leaf, magnified 65 times, made 2nd June.

Their size may easily be judged from the engraving, which truly represents them in form as well as size, bearing in mind that these are 65 times larger than the real spores. One of these pockets is shown in the engraving as just bursting, and the spores about to be distributed. It goes without saying that these minute spores, produced in thousands by each leaf, would be easily carried by a slight breeze many miles to wreak

destruction on a wheatfield. Now each of these spores is endowed with the power of producing a patch of rust on a wheatstalk if it be furnished with the warmth and moisture that it requires for germination; and as its desires in this direction are soon and easily met, the vast majority succeed in carrying out their object in life. Beginning to grow, they send out small fibrous roots or mycelium, which seeks in the tissues of the growing wheat stem nourishment for their growth. The mycelium spreads with great rapidity, and the tension arising from this soon causes the straw to split. Soon after this occurrence the work of rapid reproduction begins.

It will be remembered that in our previous article on black knot there were two kinds of spores that had two different functions to perform in the perpetuation of the fungi. One was the summer spores (*conidia*), the other the winter spores (*ascospores*); the work allotted the former being the rapid spreading of the pest during the early summer months and the function of the latter to tide it over the winter season.

Now in the wheat rust a close analogy in this respect exists, there being spores with the same office to perform. After the straw bursts a reddish substance may be noticed with the naked eye in little strips. Examined under the microscope with a power of 325 diameters, they are seen as in figure 2, marked B. The true function of these summer spores, or technically *uredo* spores, is the rapid reproduction of this parasite during the summer months. They are light, and produced in great numbers, and if given a proper temperature and moisture they spread the disease very quickly. Each one of these summer spores will, if it obtains a foothold, and germinate on a wheat-stalk, send out mycelium, and become a manufactory of spores of its own kind, and fit them for the carrying on of their work of destruction. This accounts for the rapid transmission of this disease from plant to plant, from field to field, and district to district. Later on towards fall, the winter spore, (*teleuto spores*) take the place of the summer spores, and are produced on the same mycelium. A, figure 2, represents these spores magnified 325 times.



FIG. 2.

A, winter spore; B, summer spores, both magnified 325 times.

Both these drawings have been made by the writer from natural spores, and have been correctly engraved in every detail.

These winter spores possess vitality enough to withstand the winter's cold and serve the purpose of carrying the disease over the winter. This they do, and though the rusted straw may be fed or used for bedding, and put in the manure, their vitality is but little impaired. In harvesting the wheat, these spores being ripe and only held on the wheat stem with very slender stalks, many fall to the ground. Here they lie dormant until early next spring; when warm weather sets in and the air is full of moisture these spores germinate, as seen in figure 3.

A long tube is sent out, and on these small spores (*sporidia*) are produced, which, when ripened, are wafted in all directions by the winds. If they come



After W. Smith. Magnified 500 times.

in contact with a barberry leaf, which at this time is just nicely out, it at once springs into life and pierce the tender tissue of the leaf and thrives. These sporidia have never been known to germinate on any plant other than the barberry and its near relative, the mahonia.

As to whether rusted straw is injurious if fed to cattle, Cooke & Berkley, of England, in their book on Fungi, give the following: "Then, again, it is 'fairly open to inquiry whether in years when 'red rust' and 'mildew' are more than usually plentiful on grasses, these may not be to a certain extent 'injurious. Without attempting to associate the cattle plague in any way with fungi on grass, it is nevertheless a most remarkable coincidence that the year in which the cattle disease was most prevalent in this country was one in which there was—at least in some districts—more 'red rust' on grasses than we ever remember to have seen before or since; the clothes of a person walking through the 'rusty field soon became orange-colored from the abundance of spores. Grazers on this point again seem to be generally agreed that they do not think 'red rust' has been proved injurious to cattle."

As it is the universal custom to feed rusted straw with as free a hand as clean straw, and as no data exists as to injurious effects resulting, it is safe to form the conclusion that it does little harm, if any, in this respect.

It is to be deplored that in this case no effectual, and at the same time practical remedy, has been found so far. The barberry is without doubt one of the culprits that favor the continuance of this parasite, and on this account the growing of it for ornamental or other purposes should not be encouraged. As in all other diseases of a like nature, healthiness of the plant which they attacked, is one of the strongest safeguards against injury. Over-richness of soil that tends to produce a loose, cellular growth, predisposes plants to these attacks. A deficiency in mineral food opens the way for these attacks, and on this account the proportion of organic to the mineral constituents in a soil is of great importance.

As a result of the extensive investigations of the Royal Agricultural Society of England, the following conclusions were drawn:

1. It would appear that seasons are the chief cause of rust, and that sudden changes of temperature and rain, accompanied with close, still weather, are favorable to the spread of the disease.
2. That low-lying, rich soils are most subject to attack.
3. That high farming and too generous manuring, particularly with nitrogenous manures, promote mildew.

4. That early sowing is desirable on all lands subject to attacks.
5. That while no description of wheat is proof against disease, red wheats are generally less injured than white wheats.
6. That wheat near barberry hedges is more affected than that at a distance.

The Home.

Pet Lore for Pet Lovers.

BY OLIVE THORNE MILLER.

Canaries and parrots are so universally kept that it would seem almost unnecessary to speak of their care, yet what abuses do we not observe every day as we pass along the streets? Birds living in the glare of the hot sun, and against a burning brick wall; birds placed on the sill with the window wide open and a strong draught over their shivering little bodies; birds left out in changes of weather, and till late at night, when they have been made tender by housing; birds swathed in muslin up to their roofs, so that they can scarcely see over, with other abuses too numerous to mention. Canaries, in truth, are hardy little fellows, and will endure much neglect and carelessness, but other birds will not. People are surprised to see them die so easily, while I must confess I am often surprised to see them live.

In regard to the general care of birds there is little difference in the needs of the various kinds, and that has already been spoken of; now, as to the desirability and the peculiar necessities of different birds. The canary, treated according to the directions given, should be happy and contented, and live to a good old age.

The robin is a pleasing pet, though not much of a singer in captivity. He thrives best if allowed the run of a room, but he is always cheerful if he has only a large cage with plenty of gravel, nicely prepared food, and half a dozen meal worms daily. If not caged he grows very tame; enjoys coming to the table and partaking of the food as well as the life about him, in fact, making himself one of the family. He is not slow in expressing his opinion of things that go on about him, and though you may not always understand just the point he makes, you can readily see that he has clear ideas of his own. He has also well-defined notions about the fitness of things. One that I know of, seeing sliced cucumbers in the dish that he considered suitable for his bath, deliberately lifted out each slice, threw it on the floor, and then proceeded to bathe in the water left in the dish.

The thrushes are all charming pets. Though shy about singing, they utter so many soft, liquid notes and calls, indulge in so much exquisite "whisper singing," that one forgives their reserving the song for the great out-of-doors. They require the same treatment as the robin, soft food, fruit, and meal worms; but, not being so self-assertive as he, they need looking after more carefully. They are never jolly, like their better known relative, but are so lovely and gentle that one becomes deeply attached to them.

Blue birds are pretty and winning, and will sing their delicious little warble all day long. They are not so easily frightened as thrushes, not so timid, but neither do they impress one as quite so intelligent. They must have the same care as the birds above mentioned, and like them, also, are very fond of the bath.

The Baltimore oriole is, as every one knows, brilliantly beautiful, and two or three together make a fine show; they are bright and lively in a cage, but they do not sing much, excepting for a short time in the spring. Their care is the same as the robins, only they have more need of fruit than he; all winter they must have fresh slices of apple, and they much enjoy grapes, currants, and small berries like huckleberries.

A satisfactory pet is the red-wing blackbird, who will flute his "O-ka-kee" all winter in the house. He is shy at first, but soon learns confidence, and becomes fearless and tame. Especially is he attractive when allowed the freedom of the house, making himself one of the household, and attending the family meals with perfect regularity.

One of the hardest birds to keep in a cage is our brilliant scarlet tanager. He is shy and hates to be looked at; he is dainty, and will not eat unless his

food is exactly to his mind; he usually pines for liberty, which he is apt to get by death. None but the most careful and most devoted of pet-lovers can keep a tanager alive.

The flicker, or golden-winged woodpecker, is also rather hard to keep, although if taken young and thoroughly tamed he will live for years in a cage. When caged in adult years he is exceedingly shy and wild, and will almost beat himself to death against his bars. He eats mocking-bird food.

We often see the bob-o-link for sale in the city, but he cannot be recommended as a pet. He is wild, hard to make acquaintance with and to put confidence in people. It is no wonder, however, when one considers the constant persecution to which he is subjected as rice-bird or reed-bird. Moreover the charm of the bob-o-link is his wonderful song, and to give that he needs the summer air to soar in, the warm June weather and the sweet sunny meadow to inspire him. He is not a success in a cage. The cedar bird is pretty to look at, but he is a silent fellow, and in captivity rather dull.

Some of the larger birds, which cannot be kept in an ordinary cage, are most fascinating pets in the country, or even in town where one has room. No creature that ever came out of an egg will afford more amusement than a blue-jay or the common crow, though the latter must be kept mostly out of doors. So wily, so knowing, so full of pranks are both these birds, that one gets attached to them as to a frolicsome child. The jay will hammer your furniture to pieces, destroy your pretty boxes, and tear your books, but he will be so cunning about it, show so much intelligence, and, at the same time, such a child-like ingenuousness, that you will readily forgive his naughtiness, and let him work his will.

The crow will carry off your silver spoons, hide your thimble, take possession of any jewelry you leave in his way, but all apparently with the most laudable desire to have things tidied up, so that he, too, is forgiven and loved. I think people get more attached to these two birds, in spite of their mischief, than to any others. They eat almost anything that people eat, and the crow in particular will dispose of an enormous amount for one of his size. Once domesticated one of these birds will stay about the house and never care to join his wild relatives. In truth, I suppose the life of a wild crow is a really hard struggle to supply his own larder, and the wise birds are knowing enough, when well fed without work, to stay in that happy land of plenty.

Gulls and the numerous crows make agreeable pets when tamed, but they are inconvenient to keep in city houses. In the country they are delightful to have about, because, living mostly out of doors, they do not require so much care, are more easily kept healthy, and naturally are more lively and amusing.

If you want a bird to be very tame and familiar you must have but one. No creature is more jealous or sensitive than a bird, and if you have several, none will become very intimate with you. It is easy, however, to win the heart of almost any single bird, and without starving him, or making him think he has mastered you. Simply talk to him a good deal. Place his cage near you, on your desk or work table, and retain his choicest dainty to give him yourself, from your own fingers. Let him know that he can never have that particular thing unless he take it from you, and he will soon learn, if you are patient and do not disconcert him by fixing your eyes upon him. After this he will more readily take it from your lips; and then, when you let him out of his cage, after the first excitement is over, he will come to you (especially if you have a call you have accustomed him to) and accept the dainty from you while free. From that time nothing is needed but invariably kind and gentle treatment, never frightening him by a sudden movement or a loud noise. As soon as he has really become convinced that you will not hurt him nor try to catch him, nor interfere in any way with his liberty, he will give way to his boundless curiosity about you; he will pull your hair, pick at your eyes, and give you as much of his company as you desire. You should keep out of the way of a tame bird such things as needles, rubber-bands, bits of glass, small buttons, and, in general, objects small enough to swallow. Whatever instinct he may have in his natural surroundings, does not seem to avail him in a house.

The general directions given for the care of birds are all that is necessary to know in order to keep successfully any of the foreign birds so plentiful in our country, aside from the little idiosyncracies of food,

which every dealer gives with the bird. Perhaps I should except the skylark, which requires a fresh sod and no perches, and which I have not found satisfactory as a cage bird.

I must say a few words about one habit that our little captives sometimes fall into, that should be promptly cured or they will become very annoying—that is, scattering their food. Usually mocking-bird food is put in a broad, open cup, that comes for the purpose, that the eater may pick it over and select the bits that please him, but if he begins to throw it out, either with beak or feet, take him in hand at once and change his dish for one that will not allow this. A glass dish opening at the side (large enough to be entirely safe for his head), or a China flat cover, with holes in, to put over his cup, will answer the purpose.—*Home-maker.*

Welcome Visitors.

Our thanks are due the secretary of the Clydesdale Horse Society of Great Britain and Ireland for the gift of the Clydesdale Stud Book (Vol. XI) issued by them. It is a large, well bound volume having the following number of entries; foals, 1120; mares, 1106; and stallions, 991, making a grand total of 3217. It contains also a fine life-like photograph of the magnificent stallion, Macaulay 5187, and also one of the prize winning mare, Laura Lee, Vol. VII, page 56.

Through the kindness of Mortimer Levering, Esq., secretary of the American Shropshire Registry Association, we have been favored with a substantially bound book, the American Shropshire Sheep Record Vol. IV, containing in the neighborhood of 2586 entries. We are pleased to note that one of our engravings of a trio from the excellent flock of Jno. Dryden, M. P. P., Brooklyn, Ont., has been used as a preface and an excellent one it makes.

We have been favored with a business-like catalogue from A. Gilchrist, West Toronto Junction. Many valuable hints are given on planting, nature of shrubs, trees, etc., offered, which alone are well worth the trouble of application for this useful pamphlet. The rose, clematis, hardy shrubs and climbers, trees etc., including a long list of greenhouse plants and a new novelty in the vegetable line, called "Vegetable Whitebait," is fully described. Mr. Gilchrist makes a specialty of that handsome tree, the Norway spruce, growing his own plants from seed at Guelph, and thereby enabling him to vouch for the worth of the seedlings. See advt. this is in.

Woodlawn Stock Farm (so we learn from a neat catalogue sent us) is devoted almost exclusively to the breeding of trotting bred stock under the proprietorship of Thomas Hay, Ailsa Craig, Middlesex Co., Ont. He has at present 9 head of standard bred trotters—3 stallions and 6 mares and fillies. The majority of these have been sired by Western Sprague 2289, out of equally well bred mares. This stallion is a worthy son of Governor Sprague, that at 5 years old had a record of 2.20½, and sire of seventeen with records from 2.18 to 2.30 and out of a daughter of Allie West (5-year-old record, 2.25), the first son of Almont to beat 2.30, and although he died when six years old, he sired 36 foals, of which three are now in the 2.30 list, one with a record of 2.20 and three pacers with a record better than 2.17; a son that sired Wilkes, 2.27, and a daughter that produced Mollie Wilkes, 2.20½. Through his dam Egotism he gets the blood of Woodlawn Mambrino, 2.21½ (said to be the greatest son of Mambrino Chief), who sired Princeps 536, also Pancoast, 2.21¾ (the sire of the great Patron, 2.14¾), then through his second dam the blood of Volunteer, one of the greatest sires of campaigners—all backed by the performing blood of Flora Belle, 2.22¾. With such a foundation to build a superstructure on, Mr. Hay has every reason to look for success and appreciation from others for the good work he is doing in improving the light horse interests of our Province.

We have to hand a catalogue of Holstein-Friesian cattle from the well-known firm of Smith Bros., Churchville, Ont., the proprietors of the Credit Valley Stock Farm, Peel Co. Their herd consists at present of thirty head of pure-bred Holsteins, headed by the stock bull Duke of Etgely. This bull has won many prizes in Canada, winning 2nd at Toronto Industrial, 1st at the Provincial, 1885, as a calf, 2nd as a yearling at Provincial, 1886; 1st as a 2-year-old at Toronto Industrial, 1887, and 1st as a 3-year-old at Brampton, 1888. The rest of the herd have almost

equalled him in prize winnings. They are also of the best of breeding, having been chosen by their owners, not only for their personal qualities, but for the milk-producing tendencies of their ancestors. Among the latter we notice such cows as Mink, that when a 4-year old produced 91 lbs. milk in a day, 849 lbs. in 10 days, 2499½ in a month, and in the year 16,628½ lbs.; and such bulls as Mercedes Prince (2150 H. F. H. B.), whose dam has a milk record of 88 lbs. in one day and a butter record of 3 lbs. 10 oz. in a day, 24 lbs. 6 oz. in 7 days, 99 lbs. 6½ oz. in 30 days. His weight at 3 years of age was 2325 lbs. Among the ir own is Siepkje, with a milk record of 1891½ lbs. in 31 days as a 3-year-old; Kleiterp 4th, when 3 years old, gave in 20 days 1000 lbs.; Cornelia Tensen, when a 3-year-old, gave 70 lbs. per day, 472½ lbs. in 7 days, and 1944 lbs. in 30 days; and Harmonia, that when 2 years old gave 51½ lbs. in 1 day. This firm has also seven or eight horses of Clydesdale breeding and also a thoroughbred mare, Miss Lyle (imp.), 7 years old, that took 3rd prize at the hurdle at Toronto, 1886. She has been since used as a brood mare.

Notings.

Correction.—Through some oversight there are a couple of mistakes that occurred in Mr. John Campbell's article on Shropshire Breeders' Association in our last issue (March). On page 62, second to last line, first paragraph, "sheep" should read "Shrop." Fourteenth line, second paragraph on same page should read "properly-bred sheep."

From Two Rivers.—A correspondent, Mr. Sydney Upper, writing from Two Rivers, Manitoba, says: "We have had so far a very mild winter, just enough snow to make good sleighing. The wheat market makes it lively in the towns and cities. To give you a slight idea of the business done, I may say that at Brandon alone there has been sold during 1888, 2,000 horses, mostly to supply the demands of the farmers. Wheat is now selling from 60c. to 92c., according as the frost may have affected it. Land has been taken up very fast during the past winter, and a very large emigration is expected next year."

A Line from the North-West.—A correspondent, Mr. G. L. Dodds, Melita P. O., Man., writes us as follows: "This is one of the finest countries for horse raising on the face of our Dominion. The farmer on our western prairies must have a heavy horse for the gang plough and binder. Up to the present, our farmers have had to bring their horses from Ontario. The farmers here do not raise their own horses and as a result thousands of dollars go out of Manitoba each year for horses, while we might as well grow our own. Those who have started the horse industry in this country find that it pays well, as food is plentiful, and horses in great demand. I have at present 10 horses. I am crossing the native broncho with the blood. This gives a hardy race of horses with good action and great endurance."

The Book of Ensilage.—Ensilage as a factor in Canadian husbandry, has made very rapid progress in a few years. Many are eagerly looking for information, and hence a book purporting to treat of this subject will be greeted with a warm welcome by those desiring information. We have been favored by the author and publisher, F. R. Carskadon of Keyser, W. Va., with a copy of the above book. It is serviceably bound in pamphlet form, and is replete with information of a practical nature, made up of experiences of the author in this direction, as well as short accounts of the experiences of other veterans in this work. Many copious extracts are also made from other writers, which upholds the author in his bulwarked position that ensilage has come to stay, and that it is now accepted by all those who have given it a fair trial, (and he says the ones opposed to it are in the majority of cases those who have not tried it) that as an economical wealth producing factor, it stands unrivalled. The price of the book is 50 cents.

United States Grants in aid of Agriculture.

One of the most liberal governments in aiding the cause of agriculture is that of our friends across the line. Through the *American Agriculturist* we learn that for the Department of Agriculture the appropriation this year was \$1,625,517, and the several State appropriations besides this large amount for the Department at Washington, is as follows: Connecticut, for the year ended June 30th, 1888, the total appropriations were \$45,073; New York, \$283,424, including \$10,000 for institute work; Ohio, \$87,960; Illinois, \$69,200; Wisconsin, \$68,631, including \$12,000 for farmers' institutes; Pennsylvania, about

\$50,000, while the state increased the Agricultural College fund to \$500,000, and by special act of the Legislature of 1887, appropriated \$100,000 for additional buildings at the Agricultural College, Mississippi though doing little for her institutes, etc., has given about \$330,000 to equip its Agricultural College at Starkville, and Massachusetts appropriations for agriculture were \$81,421.

Norway Spruce.—Henry Westney, Highland Creek, Ont., makes a specialty of Norway Spruce. See adv. this issue.

Subscribers.—We hope our subscribers make a special point to read all the advertisements. New advts. are monthly appearing and changes in old ones which too frequently escape attention. No reader has perused the JOURNAL carefully until the advertising pages are read.

Business Cards.—Even if a breeder has nothing to sell, the publication of his "card" is of use to him. It keeps the name of his herd and his own name before the public. It is virtually an invitation to anyone interested to call and examine the breeding stock, and when he has stock to dispose of he will find that they are not strangers to the buying public. — *The Guelph Breeder.*

Breeders' Directory.—There are scores of stockmen in various districts, who, we believe, would find it would pay them well to have a card of two or three lines in the "Breeders' Directory." Oftentimes their stock is superior, but being known only to their immediate neighbors, they have little chance of getting its full value when placed in the market; whereas a card would bring it to the notice of thousands of readers throughout Canada and the United States. The cost is only \$1.50 per line per annum.

Farmers' Institute of Haldimand Co.—The Farmers' Institute for the County of Haldimand purpose holding their second annual picnic at York, on the Grand river, midway between Cayuga and Caledonia, on the 25th of May next. The Hon. T. Baxter, speaker of L. A., Ont., will take the chair. The Agt. College at Guelph and the Exp. Farm at Ottawa will be ably represented, and the speakers will include members of the Government and other able agriculturists. The Grand Trunk station is only two miles north. J. R. Martin is the president and Chas. Waldie the secretary, both of Cayuga.

Chatham Fanning Mills.—The rapid progress that these mills have made in farming communities, as attested to by the fact that it is claimed there are 17,000 mills now in use speaks volumes for the integrity of their manufacturer, Mr. Manson Campbell, who has handled them since 1868, as well as being a strong voucher for the quality, mechanism and finish of their mills. The following are special points it possesses: Easy to turn; screw feed for the hopper; low and handy to get in the grain; strong and durable; well painted; screws and riddles to clean and separate all kinds of grain and seeds grown in Canada; fast and good cleaning of wheat. In Sept., 1888, a bagger attachment was added and the way this has been received by the farmers has been a source of gratification to the manufacturer, for no less than 500 were sold from that time to the end of that year. Turning easily, taking up but little room and being able, as it is stated, to bag from 60 to 80 bus. of wheat per hour, or 100 bus. of oats per hour, besides being a saving of waste, no wonder that it has met with success. Write them at once for their catalogue setting forth the merits of their machines and also see advt. in this issue.

Maritime Society of Ont. Agricultural College Students.—It pleases us to note in the *Daily Telegraph*, of St. John, N. B., that a society has been formed of maritime Ont. Agricultural College students, for the purpose of discussing questions of agricultural import and with the object of raising the agricultural interests of that province to a higher plane. Much more pleased are we to know that such energetic and able workers as Messrs. P. C. Black, B. E. Patterson, B.S.A., W. J. Gilbert, A. B. Wilmore, and J. B. Mackay have entered into the scheme with a fervor worthy of the cause. Some of these gentlemen have already, through the medium of the Farmers' Institutes held there during the winter, done a noble work in advocating the claims of science upon the farmer and also in showing the close relation of pure bred stock to successful farming. What better arguments could be thrown around any institution to protect her from the attacks of unprincipled opponents than the work of such of her sons as these? Such actions have a true ring about them that sounds well, not only for the future success of the institution that incited them, but also for the future of the farming and stock raising interests of the maritime provinces.

English Pedigree Live Stock.—Canadian importers and breeders of pedigree cattle and sheep will find it to their advantage to communicate with Mr. E. G. Preece, of

Advertising Rates.

The rate for single insertion is 28c. per line, Nonpareil (12 lines make one inch), for three insertions, 15c. per line each insertion, for six insertions, 10c. per line each insertion, for one year, 10c. per line each insertion. Cards in Breeders' Directory, not more than five lines, \$1.50 per line per annum. No advertisement inserted for less than 75 cents. Contracts broken by bankruptcy or otherwise, shall revert to the regular rate of 28c. per line.

Copy for advertisement should reach us before the 25th of each month (earlier if possible). If later, it may be in time for insertion, but often too late for proper classification. Advertisers not known at office will remit cash in advance. Further information will be given if desired.

IMPORTED AND CANADIAN-BRED SHROPSHIRE SHEEP For sale, registered pedigrees. Agent for Dana's Sheep and Cattle Labels. JNO DUNKIN, Brucefield, Ont. mar-1

FOR SALE
6 CHOICE YOUNG SHORTHORN BULLS and a fine lot of Berkshires, very, very CHEAP. Send for prices. EDWARD JEFFES, Bond Head, Ont. ja-3

Superior Durham Bull For Sale.
Two years old, bred by J. & W. B. Watt, of Salem, also a few first-class females. For particulars apply to HUGH MITCHELL, Southend P. O., Ont.

FOR SALE—CLEVELAND STALLIONS, bred from prize-winning stock. For further particulars apply to W. C. BROWN, Meadowvale, Ont. ja-3

Cleveland Bay Stallions and Brood Mares for Sale.

Imported (reg.) Stallion and Brood Mare in foal. 1 Grade Cleveland Stallion, rising 2 years. 1 Carriage Brood Mare. 1 Grade Shire Filly, in foal to Shire Stallion. Write, R ROW, Avon, Ont.

For Sale—Young Shorthorn Bulls and Heifers
Good colors, good pedigrees. Got by Lord Lovell =2030=, Prices reasonable. E. GAUNT & SONS, St. Helens, Ont. Lucknow Station, three miles. fe-31f

FOR SALE—YOUNG BULLS
Fit for service, representing the Duchess, Filigree and Seraphinas, all good milking families, will be sold. Worth the money. Pedigrees right. J. F. DAVIS, Glanworth, Ont. mar-2

HOLSTEIN BULL FOR SALE
Two-year-old, beautifully marked and sure stock getter. Registered in the American Holstein Friesian Association, No. 3293, vol. 2. JOHN LYLE, St. Thomas, Ont.

SHORTHORNS FOR SALE
Four Bulls, 6 to 10 mos. old, also a number of **Young Heifers**. All registered in the Dominion Herd Book. W. C. EDWARDS & CO., an-3 ROCKLAND, ONT.

JERSEY BULL FOR SALE or Exchange for an equally well bred animal.

CANADA'S FIRST No. 16, 299 A.J.C.C.
Dropped May 11th, 1885, solid dark fawn color, black tongue and switch, good size, very handsome. Average butter test in seven days of his grand dam, 21 lbs. He is offered for sale to prevent inbreeding. It would be difficult to obtain a more desirable stock bull. JOHN FENNELL, Berlin, Ont.

SHORTHORN BULL FOR SALE.
12 months old, Cruickshank blood. Sire and dam both won first prizes at Provincial fairs. H. & W. D. SMITH, Hay P. O., Ont. Exeter Station, on G. T. R., ½ mile.

FOR SALE—The stock bull, BRITISH SOVEREIGN, a pure Mantlini Booth, 4 years old, for three years at the head of the Riverside herd, Woodburn. He is a grandson of the great Sir Simeon, red in color, and has proved himself an exceedingly fine stock getter. Will be sold cheap. THOMAS SHAW, GUELPH, Ont.

BERKSHIRE PIGS.
A choice lot of Spring Pigs for sale, bred from Imported Real Briton [488], and Sir James 2nd, both successful prize winners and from a superior lot of sows. Also a number of young sows and boars, from three to six months old. J. E. BRETHOUR, Burford, Ont.

Shrewsbury, Eng. (whose history of Shropshire sheep appears in our columns this month) before deciding upon their arrangements for the purchase of English stock for importation, as he has a very wide and influential connection among English breeders, more especially of Hereford cattle and Shropshire sheep, and undertakes the purchase and shipment of stock on his personal responsibility. He will also be glad to assist importers in their selections, by introducing them to reliable breeders and giving information as to the best flocks and herds to select from, and in helping to purchase. Having special arrangements for freight, and much experience in shipping, he is able to quote very favorable terms for the purchase and delivery of stock to any part, and with his extensive export business, and connection both at home and abroad, he can be relied upon to promote the interests of his clients with fidelity and skill. He is said to be an excellent judge of stock, and is much respected by English breeders. See his adv. this number.

Stock Notes.

Parties forwarding stock notes for publication will please do so as dense as much as possible. If written separate from other matter, it will save much labor in the office. No stock notes can be inserted that do not reach the office by the 23rd of the month preceding the issue for which they are intended.

Messrs. Nicol & Sons, of Catarqui, Ont., place in our columns an advertisement relating to German Carp. All having suitable conditions, desiring to try these economical food producers, will do well to correspond with them at once.

Horses.

Chas. Brooker, Mitchell, Ont., has a soft spot in his heart for the Clydesdale. He has two pure-bred stallions at present, which are said to be a credit to their owner. Hiram Macmaster is a six-year-old out of the world famous Macgregor (1487), and his Lordship, another stallion at these stables, is also sired by Macgregor (1487).

W. C. Brown, of Meadowvale, Ont., sold one of his fine lot of Cleveland Bays to Mr. W. S. Brown of Elbridge, N. Y. This fine fellow is a three-year-old stallion, and stood at the head of the stud that took the Gold Medal at the county of Peel Exhibition. He is a perfect beauty and a credit to his breeders. His new owner is in ecstasies over him, and thinks he can whip anything in his class in New York state. Mr. Brown has a stable of fine ones left yet at Meadowvale.

Mr. J. Milne, of Hamiota, Manitoba, writes: "This has been a fine winter for stock, as we have had very little snow until lately. Stock is looking well, and all seem to want to improve by using good bulls. If the frost leaves us and we get fair prices for wheat, Ontario will get a call for her choicest stock of horses, sheep and cattle. Indeed there are some fine ones here already. We have some very fine Broncho and Oregon mares which crossed with good Clyde horses will give a very fine and suitable class for our country. Farmers are all hopeful, and longing to try their chance again. There will be a larger crop sown in Manitoba this year."

Messrs. Green Bros., of the Glen Stock Farm, Innerkip, report the following sales since our last issue: The three-year-old Shire filly Judy, sired by imported Regent (2981), dam imported Buckinghamshire Beauty to Messrs. Ormsby & Chapman of Springfield on the Credit. This filly won first last year in a class of 17 entries. The imported two-year-old Shire stallion Sir Joseph II (2399) to the Belle Ranch Horse Importing Company, Winfred, Dakota. Shorthorns—the roan bull calf Crusader, to Messrs. W. & J. Menzies, of Kirkwall, Ont., and the red and white yearling bull, Pioneer, to Mr. T. Simpson, of Wardsville, Ont. Both these bulls are sired by the Earl of Mars (4781) and are out of imported cows.

Shorthorns.

Mr. J. R. Martin, of Cayuga, holds his annual sale of Shorthorns, horses, etc., on Thursday, May 9th, 1889. First class animals of the best of breeding will be offered. Send for catalogue and see adv. this issue.

Sharman & Sharman, of Souris, Man., in a pleasant letter of the 22nd, write: "Our herd of Shorthorns now number about 30 head, mostly females, headed by the Scotch Shorthorn bull 'Buchan Laird' a massive, thick, low set animal, with a good coat of long, silky hair. He always handles as well as the most fastidious would ask. The youngsters sired by him are as near like their sire as any breeder could wish, all of them with lots of bone and near the ground. The stock purchased at the Toronto Industrial in 1886 from W. G. Pettit, of Burlington, Hy. Goss, Elmina, Messrs. T. & A. R. Snider of German Mills, and others have all proved regular breeders, and all raise their own calves. We have never, even when going to exhibit, dried up a cow for sake of fitting for exhibition, and hope by this course to preserve the milking qualities of our best cows."

Messrs. Thos. Ballantyne & Son, Neidpath Farm, Stratford, write us: "Our herd of Shorthorns were never in a better thriving condition than they are this spring. Calves coming good and strong, with a very large percentage of heifers—45. The imported Cruickshank heifer, purchased from Mr. Dryden last fall, has produced an almost model red roan heifer by the 'M. 700' sire Sussex. The imported Cruickshank bull, Prince Royal, is making very rapid growth, being now 2 years and 2 months, and weighs over 1800 lbs., being only in very moderate conditions. He is proving himself to be a first class sire. We have lately sold to Mr. G. L. Smellie, manager of the Binscarth Stock Farm, Manitoba, the fine yearling bull Marquis of Neidpath, to head that fine herd of Shorthorns."

Mr. Jos. Redmond, of Peterborough, Ont., writes under date of 20th inst. "I have sold to Wm. Wilson, of Brampton, the grand young bull Gold Finner and. He was bred by Mr. J. Bruce, of Scotland, dam, Princess of Wales 7th. The sire of this bull was sold at the Burnside sale for 100 gs., when good bulls were plentiful. His g-sire was the great show bull, Gold Finner (1879). Gold Finner gained the following prizes as a yearling in 1883, 1st at Banff, 1st and cup at Aberdeen, 1st at Tweeddale, gold medal at Inverness, at H. A. S. 1st and two cups, at Elgin 1st, and challenge cup at Spey, Avon and Tiddich. As a two-year-old, 1st at H. and A. S., at Edinburgh 1st, special prize at Elgin, and 1st and cup at Huntley. He was then sold to Mr. Hill, of Minnesota, for a very large sum, and has never been beaten in any show yard. I also hold Wimple 17th, bred from the bull that got 1st as a 2-year-old at Kingston last fall. She is a grand calf.

Herefords.

Mr. Jas. O'Brien, secretary Windsor Agricultural Society, writes us: "I do not know anything that has created such an interest in a better class of stock among our members, as the reading of the STOCK JOURNAL, for we now have in this district two imported Hereford bulls, Master Jack and Milton Boy owned by the society, the A. J. C. C. bull Scotia's Eddington, owned by Chas. Haley; the pure-bred Jersey, Earl Rieter and, and two imported Galloways, Kitty's Valentine and Pride of Tarbrooch, owned by Wm. O'Brien, who also owns the pure-bred Clydesdale mare Blackhill Kate, weight 1700 lbs, lately imported from Scotland. She is in foal to St. Nicholas, and is pronounced by competent judges to be the best Clyde mare in the maritime provinces."

Mr. F. A. Fleming of the Park, Weston, seems to have been very fortunate with his calves this winter. In a letter to us just received he says: "I have raised since fall twenty-three calves from twenty-three cows and heifers; the only loss was the death of one calf at time of calving, but as the cow dropped twins the average of one live calf to each cow calving was kept up. Out of these 23 calves there are only 7 bulls, leaving 16 heifers. All these calves are doing remarkably well, in fact I never had a better lot of young things looking and doing so well at this time of the year. I have sold this month to a gentleman from London, 16 very nice young animals to take out to his ranch in Montana, 2 of them being bulls and 14 heifers, all of my own breeding. I have still a few choice young bulls left, and expect to sell all I can spare before long. I am receiving numerous letters enquiring about Herefords."

G. S. Benson, Cardinal, Ont., under date 27th March, writes as follows: "Our stock has come through the winter very well this year and most of the animals look in far better condition than last spring. This is no doubt owing partly to the unusually open winter that we had down East this year, and the absence of the usual extremely cold weather. Feed is scarce in our neighborhood, especially hay. Our own crop was light and we had not much to spare, but we raised an excellent crop of turnips, and this, with our usual supply of ensilage, has given us lots of feed. I should like to call attention to my notice of our Shorthorn sale on page —, and trust that we shall not be entirely forgotten on the 1st of May, although we are a little further east than most breeders. Cardinal is, however, not at all an out-of-the-way place to get to and contains two very fair hotels. Moreover, I shall be delighted to try and accommodate as many visitors as I can in our own house."

Jerseys.

On another page Mr. John Fennell, of Berlin, Ont., offers for sale or exchange a pure bred Jersey bull, Canada First No. 16999. A. J. C. C. He was sired by the celebrated Canada John Bull, and out of a daughter of Faith of Oaklands. The latter has an official test of 17 lbs. 4 ozs., and the sire's dam, Nymph of St. Lambert, that tested 24 lbs. 24 ozs. in one week.

Ayrshires.

Mr. Thos. Guy, of Sydenham Farm, Oshawa, Ont., reports the following sales, viz. "To Mr. Geo. Steele of Glenboro, Man., the following Ayrshires; two young cows, Lady Wallace and Star, both in calf, four two-year-old heifers all in calf, and the yearling bull Northern Hero. Also to Mrs. Amelia Teffe, N. Y., the first prize bull calf, Prince of Sydenham, all at satisfactory prices."

Holsteins.

John Ferguson, of Wyoming P. O., Ont., is of the opinion that Holsteins are the *dux qua non*, and has followed out his idea by investing largely in this valuable dairy breed. His stock bull is Promiss, out of good milking strains. He lately imported a cow, Aggie, that is thought highly of by all who have seen her. He also purchased from Mr. Millman, of Woodstock, an imported French Coach Horse, Sir Edwin.

The Wyton Stock Farm (W. B. Scatcherd, Wyton, Ont.), is now stocked with 66 head of Holstein cattle, which originated all from imported stock. Their foundation consisted of 24 head of females and 3 males, imported in 1883. The males are Sir James of Aggie Moore, Hartog 3rd and Konig Nicholas. They have the pure Aggie strain on both sides, which are far and wide noted for their milk and butter producing qualities. They are now preparing for their 5th semi-annual sale on the 19th of April, and we are sure that they will meet with every encouragement, judging from the high standard of their past annual sales. They have endeavored to establish a reputation for the holding of first-class sales, and their efforts have met with every success, as attested by past purchasers.

The Bollert Bros., of Cassel, write under date of March 21st: "Our Holsteins are doing very finely this winter, calves are now coming almost every day. The demand for superior animals is constantly increasing, enquiries are coming in with every mail from all parts of Canada, indicating that great interest is taken in this so valuable dairy breed throughout the whole country. We lately sold a pair of extra choice heifers to Mr. C. C. Fry, Bright. One of them is sired by the great prize bull, Jumbo Boy, winner of first prize with 5 of his get at the last Michigan state fair, also winner of 1st prize in class. He is by Jumbo, winner of sweepstakes prize when only 14 months old, against all aces, competition open to all the Netherlands. The other is sired by Lytle, whose dam is a great prize winner in the States. She gave 63½ lbs. of milk in a day as a 2-year-old and her dam,

SHORTHORN BULLS FOR SALE

12 and 14 mos. old, one red, the other roan, sired by (imp.) BARON (5243). For further particulars apply to JOHN CURRIE & SONS, Everton, Ont.

SHORTHORN BULL FOR SALE

ROYAL PILOT = 10536 =, red and white; calved March 5th, 1888. Sired by Excelsior, imp. (51233); dam, the prize cow Matchless of Elmhurst 6th. Any further information sent on application to W. J. BIGGINS, Elmhurst Farm, Clinton, Ont. fe-3

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Last year's fry, at \$3.00 per 100, or \$20.00 per 1000. NICOL & SONS, Cataragui, Ont.

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FOR SALE. THE IMPORTED COACH STALLION LORD SUDLEY

Has taken the following prizes: 1st at London, 1886, 1st at Toronto, 1887, 1st at Kingston, 1888, besides eight firsts at central and local shows. He has never yet been offered anything but a first. For terms and particulars address

fe-3 SAMUEL STAPLES, IDA, ONT.

PONIES FOR SALE.

One dark brown, 13-3 hands, 700 lbs., from T. B. mare and half Arab stallion. One light brown, 13 hands, 600 lbs., from a 4 minute trotting Exmoor pony mare, and a 14½ hands, Phil Sheridan stallion, 2400. Both very kind and nicely broken to saddle. Address,

JAMES MOODIE, Eshcol Grove Stock Farm, Dec. 6th. CHESTERTON P. O., Dundas Co., Ont.

Durham Bull For Sale IMPORTED OXFORD

Four years old, bred by S. Campbell, Aberdeenshire, Scotland, has been our stock bull for three years, and is now for sale. Oxford is a grand bull, of great substance and good qualities. Warranted to be a sure stock-getter or no sale. Was never beaten in the show ring. Also four of his gets, from 13 to 22 months old. All registered in the D. H. book. They are a good lot of calves; all red in color. For further particulars apply to

feb-3 SIDNEY BARCLAY & SON, Dale P. O., Ont.

Shorthorn Bulls

1 bull, aged 5 years; 1 bull, aged 19 months; 1 bull, aged 14 months; 1 bull, aged 12 months. All of Dom. S. H. H. B. registry, except the bull aged 19 mos., which is eligible to N. S. H. B.

A. C. BELL, Troutbrook Farm, New Glasgow, N. S.

SHORTHORN BULLS.

FOR SALE—Four Shorthorn Bulls (Bates) from seven to eighteen months old, sired either by 5th Duke of Holker (imp.) = 1272 = (41687), or Duke of Salisbury (imp.) = 9180 = (53780). Excellent animals of good pedigree and chiefly red. Apply to JOHN IDINGTON, Strathford, Ont.

Meije, won a gold medal in Holland. Mr. J. Sylvester, of Ratho, took the yearling bull Oxford Billy. He is a very fine animal, of the Barrington strain. Mr. L. Lovell, of Wrother, Ont., selected one of our very choicest young bulls, acting on the principle that the best is the cheapest. He is sired by our silver medal bull Barnito, and out of a 2-year-old heifer, winner of 1st prize at our county show, competing against a heifer 6 months older than herself. She is out of our noted cow Sykje, winner of 1st prize in class, and diploma for best female any age, at the Provincial fair, 1885. Huron Co. should feel proud of such energetic men as Mr. Lovell, and of the stock he introduces."

Sheep and Pigs.

"Orders are coming fast for spring pigs of the Ohio imp. C. W. strain" writes Mr. Daniel Decourcy, of Bombala, Ont., "and will have over 100 young pigs to meet the spring trade."

Mr. E. D. George writes us, that the stock notes relating to sales, etc., credited to George & Sons, in our March issue, should have been credited to him. He says that his Chesters are doing well, the youngsters coming strong as usual.

Mr. W. J. Aikins, of Hilversum Farm, Cannington Manor, Assa, N. W. T., writes to make a correction of our notice of the importation recently made by him for the same, as detailed in our Feb. issue, page 50. Mr. Boissrain, the enterprising proprietor, manages the farm himself. The journey from the station to the farm occupied three days, not one as stated in our notice.

Mr. Henry Arkell, Arkell, Ont., writes us. "My stock are all doing well. I have made some good sales, quite a number going to the U. S. I have a splendid lot of young rams and ewes for the coming season of both Oxford Down and Cotswold, and am having good luck with the lambs and young Berkshires. The Shorthorns are doing well, although there has been great scarcity of hay in our section. I am pleased to see the JOURNAL doing such good work. I have derived a great deal of benefit since its commencement."

Mr. J. C. Snell, Edmonton, Ont., reports a steady demand for first-class Berkshires and Cotswolds, and among recent sales the following: to John Thompson, Uxbridge, boar; A. Young, Princeton, boar; J. S. Ross, Yeovil, boar; N. P. Wood, Kingston, boar; W. Spruile, Westbrook, boar; R. M. Brown, Briden, boar; A. Cochran, Almonte, boar; W. C. Edwards, M. P. Rockland, boar and sow; Ed. Horton, New Dublin, boar; C. S. Smith, Tilsonburg, sow; Isaac Devitt, Florida, boar and sow; W. H. Jacobs, Madison, Wis., 5 sows; 1 boar; E. V. Miller, Morley, Iowa, sow; W. I. Samuels, Bardston, Ky., 2 sows; 1 P. Foster, Hartford, Ky., sow; J. H. Reid, Girard, O., sow; I. H. Newland, Slick Rock, Ky., boar; L. P. Ford, Glasgow, Ky., boar; Bryan & Williams, Westchester, Ind., 1 ram, 4 ewes; 1 Runciman, Orwell, O., 5 rams, 4 ewes; R. H. Lide, Livingston, Ala., boar and sow; J. D. Burch, Aurora, Texas, boar and sow.

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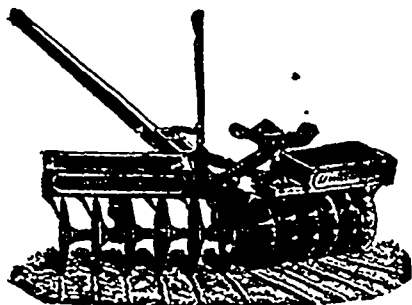
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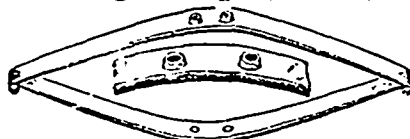
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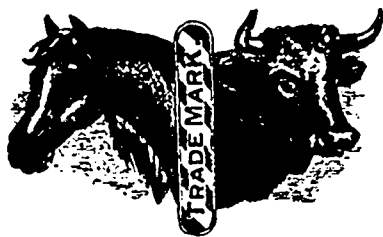
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TESTIMONIALS

HAMILTON Oct. 24th, 1888

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The Bates portion of herd is headed by imported 8th Duke offspring—9279—and consists of the following families:

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SHIRE HORSES,
BERKSHIRE PIGS.

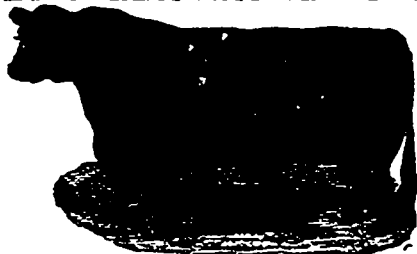


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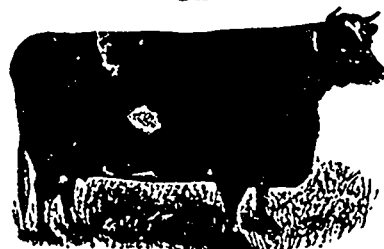
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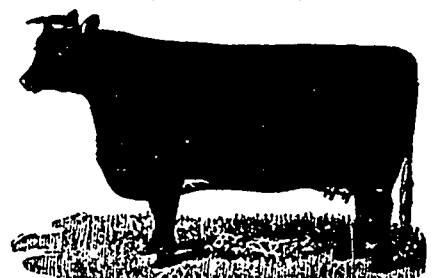
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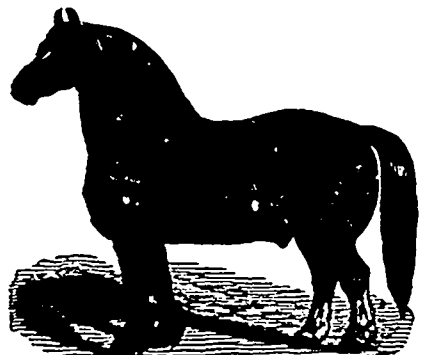
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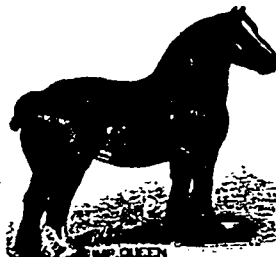
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Have on hand for sale, on very reasonable terms, 8 very choice and carefully selected

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consisting of 1st, 2nd and 3rd prize winners at Provincial Exhibition, at Kingston, 1888, as well as winners at big shows in Scotland. Every stallion but one prize winners at leading shows both in Canada and Scotland, and from such noted sires as Lord Erskine, Cairnbrogie Kier, Good Hope (by Darnley), Crown Jewel and others.

Intending purchasers and all horsemen are invited to inspect our stock. Correspondence solicited.

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I HAVE still on hand and for sale an excellent lot of imported Bulls, Heifers and young Cows, besides an exceedingly good lot of home-bred Heifers and Bulls—all by imported sires and mostly from imported dams.

I can supply intending exhibitors with first-class show animals of either sex and of various ages, from calves upwards.

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Claremont Station, C. P. R., or Pickering Station, G. T. R. Write or wire me, when and at which station to meet you. Send for catalogue. No business, no harm.

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STANDARD-BRED TROTTERS, American Cattle-Club Jerseys.

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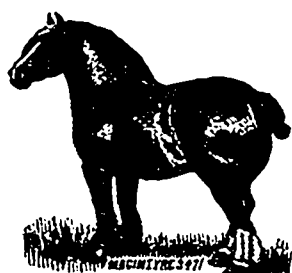
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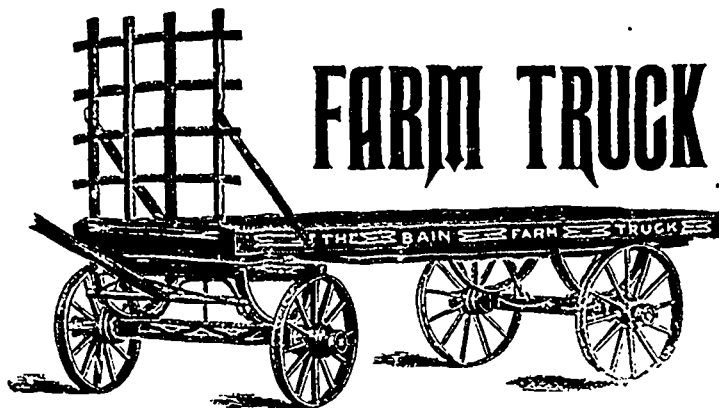
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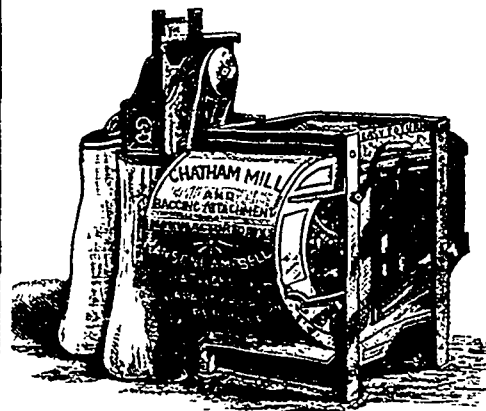
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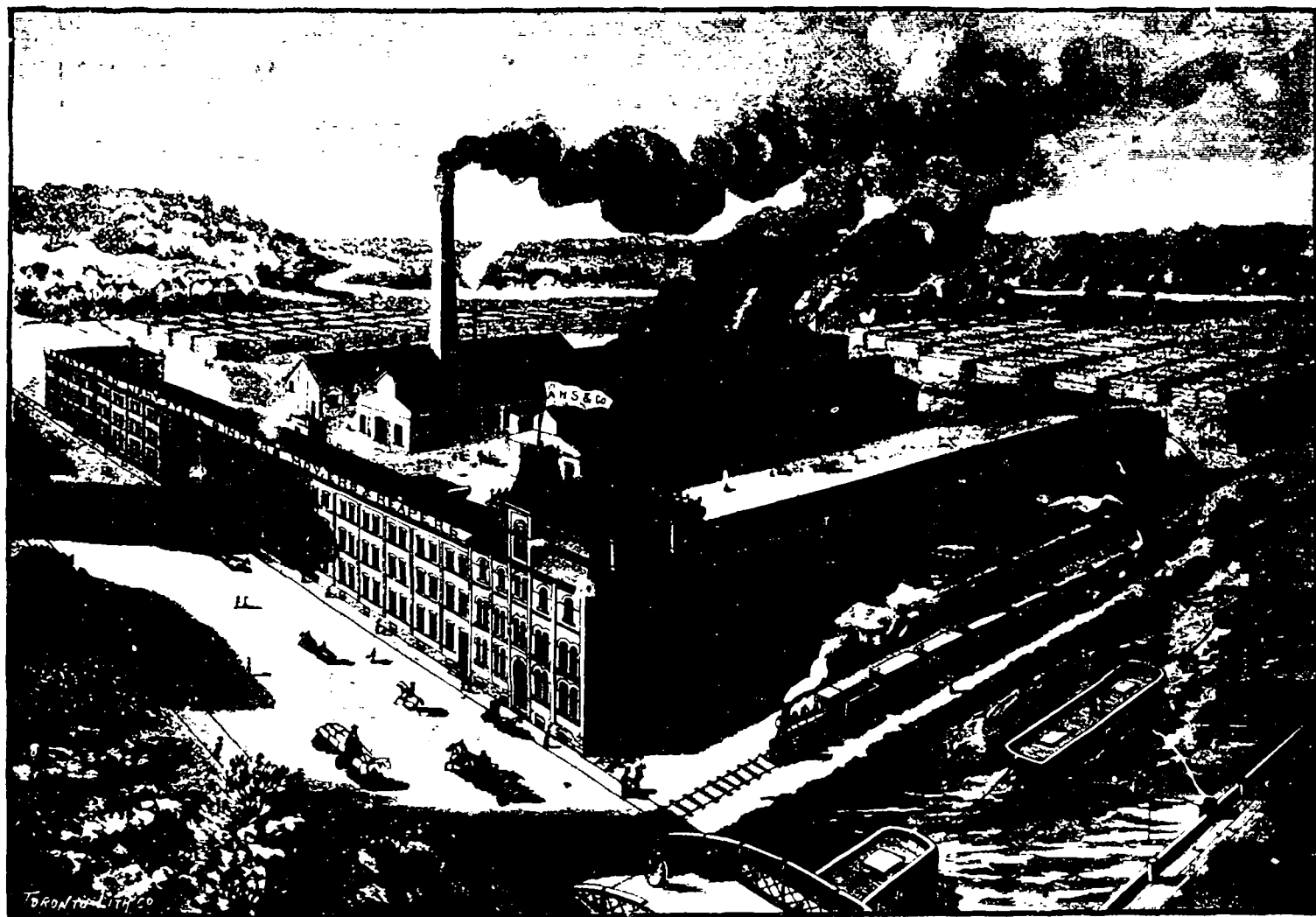
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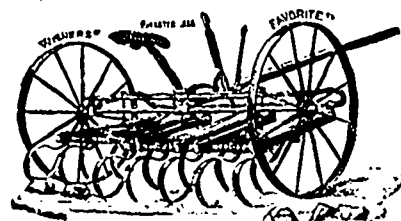
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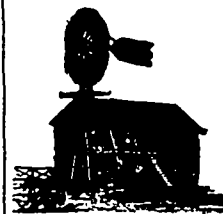
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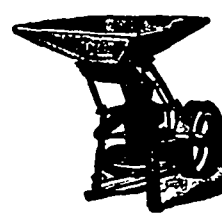
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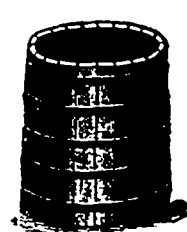
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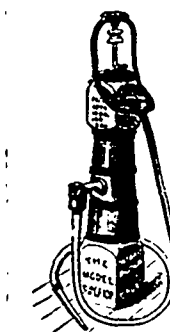
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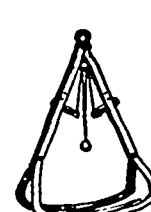
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